

FINAL REPORT

Social Impact Assessment of the Central West Coal and Coolimba Power Projects

Prepared for

Aviva Corporation

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Executive Summary

ES 1 Introduction

The proposed Central West Coal and the Coolimba Power Projects will be located in the Mid West Region of WA (as defined by the Department of Local Government and Regional Development), in the vicinity of the Eneabba townsite approximately 278 km north of Perth

This Social Impact Assessment (SIA) examines the potential impact of the Projects on the key towns in the Sub-Region so that the appropriate mitigation measures can be factored into the Projects' plans.

This report has been prepared for Aviva as a management tool for internal use. Many of the issues identified go beyond those that need to be considered for regulatory compliance but are provided to inform Aviva's decision making processes, especially in relation to construction workforce accommodation and management.

ES 2 The West Midlands towns

There are three towns that will be directly affected by construction and operations of the project(s). The essential characteristics of these towns are presented in the table below. As shown these are all small towns, and they have limited facilities. The nearest towns that are able to provide most day-to-day services are Dongara to the north, and Jurien to the south.

Town characteristics

Characteristics			
	Leeman	Eneabba	Greenhead
Population	396	203	248
Workforce	174	107	80
Dwellings (number)	308	73	295
Primary school students	58	38	No school

ABS Census data 2006

ES 3 Recommendations for workforce management in the construction phase

The construction workforce for both Projects will be housed in a purpose built 600 bed facility adjacent to Leeman. Construction will have a temporary impact on the life of people in the Sub-Region.

The Report presents issues, risks and opportunities that may arise as result of locating the construction camp immediately adjacent to Leeman. The suggested Mitigation Strategies are presented below as recommendations for Aviva's consideration. These apply both to a 200 person camp, and to a 600 person camp that is assumed to be located adjacent to Leeman.

ES 3.1 Formalising the consultation arrangements

- Establish and resource a formal Community Group that is empowered to provide advice to Aviva on all aspects of the construction process as it will affect Leeman. The Group should include as a minimum representation from the Shire, the Leeman community, key service agencies (Health, Education, Policing), local business interests, and social and sporting interests.

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- The remaining recommendations can be implemented by Aviva Corporation through the workings of this Community Group.

ES 3.2 Camp location, design and operating model

- Undertake a full and extensive consultation with Leeman residents on the specifics of camp design and functioning before irreversible decisions are made.
- Develop a model that works best for the company and for the town.
- Ensure that the decision-making process on final location, design and operation is transparent and communicated.
- Address community's need (if any) for additional facilities in camp design, that allows residents access without disturbing normal camp functioning

ES 3.3 Managing impact on local services

- Work with existing business owners within the town to develop plans for shared resources and mitigation strategies to lessen impact, and capture opportunities.
- Explore options for provision of camp facilities or invest in increased town services
- Ensure that St John's Ambulance Service and the Royal Flying Doctor Service (RFDS) have sufficient capacity
- Work with community to ensure communication of issue if this arises

ES 3.4 Managing safety and lifestyle issues

- Work with local police, community and workforce to develop strategies to manage increased traffic and workforce behavioural aspects in town.
- Work with the community and responsible agencies (e.g. Departments of Fisheries, Environment and Conservation, Shire of Coorow) in managing the camp recreational activities

ES 4 Assessment of the preferred option for locating the residential operational workforce

Aviva have made projections regarding workforce residence location in Leeman, Eneabba and Green Head. Of a total workforce of 100 people across the two projects, Aviva expects to be able to recruit 28 employees already resident in the three towns, and attract 72 employees to move to one of the three towns. Of these, it is anticipated that 32 will purchase houses in the towns, with the remainder accommodated in new houses. The implications for the three towns are summarised in the table below.

Assuming a multiplier of 3.5 per additional residents for each employee moving to town (a combination of family members and additional service personnel), the total population increase will be about 250 across the three towns. Both Leeman and Green Head are well supplied with dwellings given their populations, although the pattern of occupancy suggests that many of them are holiday homes, and not be available for sale, or year-in, year-out rental. Further investigation of actual availability of adequate standard housing for purchase or long-term rent will be required closer to the time of the commencement of operations.

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Impacts of operational workforce location

Factors	Town		
	Leeman	Eneabba	Greenhead
Number of employees who are existing residents	10	8	10
<i>Percentage of total workforce</i>	6%	7%	13%
Number of employees moving to town	40	2	30
<i>Percentage population increase (assuming multiplier of 3.5 residents/employee)</i>	35%	4%	42%
Number of employees who are new residents buying existing homes	20	2	10
<i>Percentage of available houses</i>	6%	3%	3%
Number of employees who are new residents requiring new lot and house	20	Nil	20
<i>Percentage increase in number of houses in the town</i>	6%	Nil	7%
Total	50	10	40

In Leeman, the population increase will cause some impact on housing, commercial, health and education services. In the case of the latter, additional young families in the town may increase the primary school enrolment in Leeman, which would reverse a declining trend in school numbers, and be a beneficial development. As with other small towns in the area, the lack of high schooling is likely to limit people's stay in the town as children approach high schooling age.

The projected recruitment of 30 external people to be employed and resident in Green Head could result in an additional 105 people resident in the town, which equates to a 42 per cent increase in the population. This will have some modest impact on local services. Further, people moving to Green Head will need to be aware that there is no primary school or high school in Green Head. Primary students go to nearby Leeman and High School students commute to Jurien.

The current projection for Eneabba is that ten (10) employees will be located in Eneabba with eight (8) of these being existing residents. An additional two employees will not have any impact on the town.

Overall, the projected employment arrangements for the operational phase are likely to have only modest impacts on services, and will contribute to critical mass in some social areas in the three towns. The main issue to face employees moving to the towns are the less than ideal education arrangements, and perhaps some issues in locating suitable housing to purchase or rent. Given the better availability of services and schooling in Jurien and Dongara, it may be that some employees may choose that town as a residential location if this is acceptable to the employer.

1.1 Introduction

The proposed Central West Coal and the Coolimba Power Projects will be located in the Mid West Region of WA (as defined by the Department of Local Government and Regional Development), in the vicinity of the Eneabba townsite approximately 278 km north of Perth (see Figure 1-1). For the sake of convenience, the area being influenced by the Projects is termed using its agricultural descriptor, being the 'West Midlands Sub-Region' or 'West Midlands' (see Department of Agriculture and Food website).



Figure 1-1 The West Midlands

1.1.1 The Projects

The **Central West Coal Project** will involve the mining of a 75 Million tonne sub-bituminous coal deposit as a fuel source for the proposed **Coolimba Power Station Project**.

In terms of assessing the social impact the following key characteristics of the projects shown in Table 1-1 have been identified.

Table 1-1 Project descriptions

Item	Central West Coal	Coolimba Power
Life of operations	Approx 30- years	Approx 30 years
Construction Period	Approx 2 years	Approx 4 years
Workforce – construction	600	
Workforce – operations	50	50
Traffic	Increased light vehicles, buses for staff. Heavy vehicles.	Increased light vehicles, buses for staff. Heavy vehicles.

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Introduction and Methodology

The indicative locations of the operational (residential) workforce are shown in Table 1-2. Aviva Corporation has selected these indicative numbers on the basis of local advice from the Shires, the community and business people (including Real Estate Agents).

Table 1-2 Projected workforce residence location

Town	Leeman	Eneabba	Greenhead	Total
Number of employees who are existing residents	10	8	10	28
Number of employees who are new residents buying existing homes	20	2	10	32
Number of employees who are new residents requiring new lot and house	20	Nil	20	40
Total	50	10	40	100

1.1.2 Towns in the West Midlands

The key towns in the West Midlands that are within reasonable distance of the Project sites are as follows. It is planned that the operational workforce will be housed across the three towns listed below.

- **Leeman.** The proposed construction workforce camp for both Projects will be located adjacent to the Leeman townsite which will therefore be subject to the largest impacts during the construction phase.
- **Eneabba.** The Projects will be located in the vicinity of this small townsite.
- **Green Head.** This townsite is located only 13 km to the south of Leeman. Some of the impacts from the construction workforce camp may flow onto this town.

The following towns might be considered outside the area that will be directly impacted by the Projects. However, they have been included as part of the West Midlands region. Jurien and Dongara are the two largest towns in the area and are therefore relevant in terms of services and development potential.

- **Jurien.** This is the sub-regional centre in the West Midlands with a growing population and a wide range of services.
- **Dongara.** Dongara/ Port Denison is a relatively large town with a wide range of services.
- **Carnamah.** A modestly sized town, supporting the adjacent agricultural areas. The Shire of Carnamah is headquartered in the town.
- **Coorow.** Is a small town supporting the adjacent agricultural areas. The Shire of Coorow is headquartered in the town.

These towns are described in greater detail in later sections.

1.2 Purpose of this report

This report has been prepared for Aviva as a management tool for internal use. Many of the issues identified go beyond those that need to be considered for regulatory compliance but are provided to inform Aviva's decision making processes, especially in relation to workforce accommodation and placements.

1.3 Methodology

1.3.1 Scope for the SIA

This Social Impact Assessment (SIA) examines the potential impact of the Projects on the key towns in the Sub-Region so that the appropriate mitigation measures can be factored into the Projects' plans.

While separate environmental assessments are being conducted for Central West Coal and the Coolimba Power Station, the Projects will have separate and cumulative socio-economic impacts, given that it is planned that construction workforces for both Projects will be co-located. The preferred option for the operational workforce is that they be distributed across the three closest towns.

Throughout this report reference is therefore made primarily to the cumulative impacts of the two Projects (coal mine and power station) on the towns. It is acknowledged however, that this report will need to inform two separate PERs so where appropriate the impact of each Project (primarily by number of workforce) is examined.

1.3.2 Data and information sources

This study has consisted primarily of a desktop review of the following sources.

- Demographic data from the Australian Bureau of Statistics (ABS) 2006 census. Accessed during June 2008. Most demographic data from the 2006 Census presented in this Report is based on those people counted who cite the location of interview as being the 'Place of Usual Residence'. This represents a small under-estimate (by one or two per cent) of the 'Estimated Resident Population' given that people who were away from their normal home in the Sub-Region on Census night will not have been accounted for.
- Relevant state and local government websites (e.g. Shires of Carnamah, Coorow and Dandaragan, Department of Education and Training, Department of Health, Western Australian Police Service, Landcorp).
- Real Estate Agencies and Iluka for enquiries about housing in the area.
- Generic information about the issues involved in locating and designing long distance commuting camps, that has been used in informing the specific issues facing these Project(s).
- Key project documents and reviews prepared for the Central West Coal Project and the associated Power Station Project including:
 - Project descriptions;
 - Community input gathered through stakeholder consultations; and
 - Traffic Impact Statement.

It should be noted that URS relied on the information provided by Aviva Corporation regarding input from community consultations and was not required to conduct any consultations as part of the brief.

1.3.3 Analysis of the data and information

The available information has been analysed on a town by town basis to determine the town's situation, and the social impacts that will need to be managed as the Project(s) commence.

Section 1

Introduction and Methodology

This report includes an overview of key statistics for each town before looking at some of the possible impacts and opportunities during the construction and operational phases for both Projects.

Construction Phase

The Construction Phase is more straightforward in assessment, given that the construction workforce for both Projects will be housed in a purpose built 600 bed facility adjacent to Leeman. Further, construction will have a temporary impact on the life of people in the Sub-Region.

Operational Phase

The impacts identified during the operational phase have been based on housing need projections made by Aviva. These projections (see Table 1-2) for the 100 person operational workforce are based on the following assumptions:

- Accommodation for permanent workforce will be required from 2013;
- The workforce will be split between Eneabba, Greenhead and Leeman with approximately 10% in Eneabba, 40% in Greenhead and 50% in Leeman;
- Greenhead and Leeman are somewhat interchangeable so if demand cannot be met in one it can hopefully be met in the other;
- If demand cannot be met in the above three towns there is opportunity for it to be met in nearby towns such as Dongara and Jurien;
- Some employees will be existing residents of the local towns (28);
- Some employees will wish to buy an existing home in one of the local towns (32);and
- Forty houses would be constructed to accommodate employees.

2.1 Current Situation

Leeman is located approximately 295 km north of Perth on the coast in the Shire of Coorow. It is seen by those living there as being predominantly a fishing village, well known for its crayfish and deep sea fishing.

2.1.1 Demographics

The township of Leeman has a population of just under 400 people (ABS 2006). Table 2-1 shows the breakdown of this population, based upon 'Place of Usual Residence'. Three per cent of the population are Indigenous (n=13).

Table 2-1 Leeman population at 2006 census

Statistic	Males	Females	Persons
Total persons	224	172	396
Age groups:			
0-4 years	16	9	25
5-14 years	37	16	53
15-19 years	13	12	25
20-24 years	10	11	21
25-34 years	24	27	51
35-44 years	30	30	60
45-54 years	45	28	73
55-64 years	27	23	50
65-74 years	14	9	23
75-84 years	8	8	16
85 years and over			

ABS 2006

2.1.2 Economy

Employment

Table 2-2 sets out the employment rates for people who are 15 years and older, as at the 2006 census.

Table 2-2 Employment rates – Leeman (ABS 2006 census)

Category	Percentage of total labour force	West Australian percentage
Employed full time	57.5%	61.0%
Employed part time	23.5%	28.4%
Total percentage of people in the workforce in paid employment	81.0%	89.4%
Unemployed	7.3%	3.8%
Not in the labour force	37.7% (n = 120)	35.6%

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Leeman

Leeman (and Green Head) have an unemployment rate that is higher than the state average. This is not easily explained but may be due to a seasonal workforce in the Rock Lobster industry – when the census was completed in July 2006 it was the ‘off-season’.

As shown in Table 2-3, the mining sector and construction (37.9%) is the most important source of employment. This is because there are already a number of people resident in Leeman working at the Eneabba Mine. Other categories of employment sectors that utilise the local labour force are agriculture, forestry and fishing (10.9%) and accommodation and food services (8.6%).

Table 2-3 Employment by industry type - Leeman

Category	Males	Females	Persons	As %
Agriculture, forestry and fishing	15	4	19	10.9%
Mining	39	6	45	25.8%
Manufacturing	3		3	1.7%
Electricity, gas, water & waste services				
Construction	17	4	21	12.1%
Wholesale trade	3		3	1.7%
Retail trade		10	10	5.7%
Accommodation & food services	3	12	15	8.6%
Transport, postal & warehousing	7	3	10	5.7%
Information media & telecommunications				
Professional, scientific & technical services	3		3	1.7%
Administrative & support services				
Public administration & safety	5	5	10	5.7%
Education & training		12	12	6.9%
Health care & social assistance		5	5	2.8%
Arts & recreation services				
Other services	9	3	12	6.9%
Inadequately described/Not stated	6		6	3.8%
Total	110	64	174	100%

ABS 2006

Small businesses

According to the Shire of Coorow (2008) there are currently 20 services in Leeman, as follows.

Retail

- Leeman Fuel & Liquor
- Leeman Hardware and Agencies
- Malibu’s Surf Shack & Gifts

- Jurien Ice Supply
- Seaside Supplies – General Store
- Snack Shack
- Snag Island Roadhouse

Accommodation/Hospitality

- Leeman Caravan Park
- Leeman Country Club
- Leeman Holiday Units

Other

- Seaside Supplies Cartage
- Terry O'Callaghan Auto Repairs
- Leeman Boat Storage and Garden Centre
- Conder Electrical Service
- Roy Weston Real Estate
- Wings Driving School
- Bell-Quip Electrical Services
- West Coast Floats
- Coastal Pavescaping
- Leeman Rent-A-Shed

2.1.3 Housing

Just over 60 per cent of dwellings (n=308) in Leeman are either owned outright or are being purchased. This compares to about 64 per cent across WA (ABS Quick Stats 2006), and is a slightly lower level of house ownership than in other small towns in the agricultural areas of WA (e.g. Coorow has 72% home ownership (ABS 2006 Quick Stats)).

While this suggests a relatively stable community, committed to living in Leeman long-term, only 173 (56%) of dwellings were occupied at the Census date (July 2006) which confirms the reported use of dwellings as holiday houses for people living inland, or rock lobster fishers who occupy them during the season (which finishes in 30 June each year). Real Estate Agents report that some of the owners of these holiday homes do rent them out for short term rentals, but reserve them for their own use at peak holiday times. As such, securing long-term (more than 12 months) rental could be difficult.

The average house price for Leeman for the period 31 March 2007 to 31 March 2008 was \$429,000 with five (5) houses selling during this period (RIEWA). There has been a 25.5% growth in the average price over the past five years.

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Leeman

2.1.4 Community services

Education

The current statistics of the school are presented in Table 2-4. Since 2004 the enrolment numbers at Leeman Primary School have been steadily declining, from a total of 120 in 2004 to 58 in 2008. This school population is now less viable than previously according to Department of Education and Training standards.

There is no ready explanation for this decline in the school population. Without direct inquiry, the data would suggest that people with school-aged children are moving away from the town to seek education in schools with a larger critical mass, and/or people are choosing not to move to Leeman if they have school-aged children.

Table 2-4 Profiles of Leeman Primary School

Item	Leeman Primary
Enrolment (2008)	58
Indigenous %age	1.7%
Administration staff	2
Teaching staff	3
Support staff	6
Total FTEs	7.2

Department of Education and Training (DET) – Schools Online website

Community Safety

Leeman has had a total of 9 reported crimes since April 2007. Five cases of assault were reported, and four incidents of burglary. January 2008 saw 5 crimes being reported, which was particularly high for Leeman. Since then there have been no further incidents (WA Police Service website). Overall, the town is safe with a very low level of infringement.

Health

Leeman offers reasonable health services for a town of its size. Jurien (45 km by bitumen road south) has a full-time General Practice operated by Gemini Pty Ltd (Gemini website). A doctor from the Jurien General Practice provides a service in Leeman every second Friday. A child health nurse visits Leeman once a fortnight, but this service is booking dependant. Like Jurien, Eneabba and Green Head, Leeman has an ambulance service which takes people to Dongara 24 hour accident and emergency (Department of Health website).

Recreation Facilities

Recreational facilities in the town of Leeman comprise of a town Community and Recreation Centre, library and oval. The oval is used by the local Football Club and junior T-Ball group. Other recreational groups in the town include the Leeman Basketball Association, Leeman Bowling Club and the Leeman Darts Club.

2.2 Possible social impacts and opportunities during the construction phase

As it is proposed to locate the workforce construction camp for both Projects adjacent to the Leeman townsite, this town will be subject to higher impacts from the Projects than other towns, although this will only occur for the period of construction.

While the facilities that will be available within the camp will influence the impact on the town (for example if a wet mess is available there would be less stress on local liquor outlets), the camp will essentially increase the size of the town by 50 per cent by the Central West Coal Project and 100 – 150 per cent by the Coolimba Power Station project during construction and this will need to be carefully managed.

2.2.1 Generic issues to be considered in locating a construction camp

Much of the available literature on long distance commuting (termed fly in, fly out (FIFO) or drive-in, drive-out (DIDO)) relates to the debate between residential models and FIFO arrangements and to the benefits/costs of FIFO on employers and employees (see for example Chamber of Minerals and Energy 2005, Houghton 1993, Watts 2004).

The issue of the best location for FIFO or DIDO 'camps' – whether they should be within established towns or away from them appears to be an area that would benefit from further research. It is unlikely however that there would be a definitive answer to this question.

Small towns that have a relatively stable population would clearly feel the impact of a large number of 'strangers' moving into the town *en masse* more than a larger town which has a transient population. It would therefore be important to gain an understanding of what the majority of current residents value about their town. While some may value the economic opportunities, others may put a higher value on other less tangible things such as knowing everyone when they go shopping or not having to queue at the petrol station. One of the arguments posed against DIDO workers in towns is the fact that they cannot 'give back' to the community and essentially 'sit outside' the residential community. For some communities this may be more of an issue than others, depending on the current structure of the community.

While the introduction of a town based DIDO 'camp' does not have the same impact as a residential model in terms of the more 'family' related services (education, health, child care) the influx of DIDO workers would have an impact on infrastructure and services (as discussed elsewhere in this report).

2.2.2 Impacts from the Central West Coal Project

While the impact of an additional 200 people in the township would not be insignificant on such a small town, in all likelihood the existing commercial services would be able to cope. Leeman is host to events such as the Snag Island Windsurfing Classic which would see an influx of large numbers into the town so it may have the capacity to cope with the increased demand. Consideration would need to be given to the inconvenience that residents may incur as a result of this increased demand that is sustained over the longer term (i.e. two years as opposed to a weekend).

2.2.3 Impacts from the Coolimba Power Project

With a construction workforce of 600 to be accommodated in the Leeman work camp for the period of construction, the nature of the town will be changed from a small residential and holiday 'fishing village' (as it is recognised by residents in the consultation conducted by Aviva) to a town with a population about two-thirds of

Section 2

Leeman

Jurien. However, this will occur without a proportional increase in the availability of publicly accessible services given that investment in additional services would not be feasible for the period of construction only.

It should also be noted that during consultation conducted by Aviva it was recorded that there was “a lot of support for the workforce to be accommodated at Eneabba to sustain the town” and that “location of the construction camp housing single males should be closer to the site than the town (Leeman)”. If the construction camp is to be located in the proposed site adjacent to Leeman extensive consultation with residents would need to be conducted to further examine concerns and opportunities directly related to the camp, and how these might be mitigated in the precise location of the camp, its design and the facilities provided. Further details are presented in the following section.

2.2.4 The nature of the impacts

The nature of suggested impacts have been drawn from previous work conducted by URS that has investigated the situation in towns with adjacent camps or villages housing long-distance (e.g. FIFO or DIDO) commuting workforces.

Increased demand on services

Clearly the influx of up to 600 additional people for the Coolimba Power Station construction could create a high demand on current services, especially for those things that may not be supplied by the camp such as petrol, personal items, food/drink and some forms of recreation (e.g. tennis, beach fishing). There is anecdotal evidence from the Pilbara that although construction workforces may work on 12 hour shifts, employees do access town facilities in their own time, and that there is some expenditure on personal items and recreation outside that available within camp facilities.

There are currently two service stations in or near the town – Leeman Fuel & Liquor and the Snag Island Roadhouse and only one general store. Consideration needs to be given to the current services' capacity to cope with this demand and also how this increased demand will impact on the existing residents of the town. It is often the 'day to day' issues such as the inconvenience of standing in a queue for service in the local shop that can raise the ire of local residents, which may then lead to poor relationships between company and community leading to costs for the company in 'reputation management'.

Some of this impact could be offset by careful design and provision of services within the camp that as well as meeting construction employees' needs, can also be utilised by residents. Examples include provision of access to the mess and on-site sporting and entertainment facilities. There may also be opportunities for local businesses to share transport costs with Aviva Corporation for supplies into the town.

Increased traffic in town and surrounding areas

The proposed location of the camp is south of the town which means that workers travelling from the camp to the site will not pass through town. That being said, the increased volume of traffic on roads in town and the surrounding areas will still impact on existing residents in a variety of ways including pedestrian safety (e.g. children who are accustomed to quiet roads), travel time, and road safety. This will particularly be the case given that at its peak, the construction phase is expected to contribute approximately 340 daily vehicle movements on average. As well as increasing road traffic, it is likely that the existing number of Police Officers in the town (3) would need to be expanded by up to one Officer to allow adequate road use supervision.

Increased use of recreational facilities and areas (e.g. ovals, beaches)

If additional recreational facilities such as ovals are not provided within the camp complex there may be an increased demand on local parks and reserves which could prove to be problematic for residents. Similarly, a rapid increase in the attendance at local beaches, fishing spots and so on could impact on existing residents. One of the concerns raised during the consultation process conducted by Aviva was possible adverse effects on the local fishing industry or marine environment. Even if there is no direct impact on the marine environment from the project, consideration should be given to the impact on recreational fish stock from the increased population. Depending on the work rosters (i.e. will there be workers who have Sundays off in the camp?), it is likely that recreational fishing will increase significantly, which in turn will increase the requirement for supervision by the Department of Fisheries staff responsible for the Sub-Region.

Potential increase in anti-social behaviour

Overall the town of Leeman has a low level of crime. There are currently three (3) officers stationed at the Leeman station and this station covers Green Head and Eneabba. With a camp of this size there is a risk for anti social behaviour and/or traffic incidents such as drink driving and speeding. Based on discussions with Police Officers in Pilbara towns, depending upon camp location, and operating rules, a construction workforce of this number may require up to an additional Full Time Equivalent Officer to be located in the town to cater for busy periods.

Increased demand on health services

Currently the health services available in Leeman are an ambulance service that takes patients to Dongara hospital and a visiting doctor every second Friday. This lack of current service would point towards the need for the company to provide a level of health/first aid at the camp. Concerns regarding the stress that will be placed on existing health services were raised during the consultation process conducted by Aviva. The community may appreciate the opportunity to access first aid services and other emergency services provided by the camp. Other considerations are the need for the company to support emergency transport (via St John's Ambulance and the Royal Flying Doctor Service).

Possible staffing issues in services if existing staff are drawn to opportunities provided by mine and power station

While it is impossible to predict how many existing residents will be drawn from current employment to opportunities offered by the Project and associated Power Station, this is an issue that can have quite an impact on the delivery of existing services due to lack of staff. Often the impact of this is most profoundly felt in areas where wages are low – for example child care and service industries and will be exacerbated by WA wide staff shortages in these types of industries.

2.2.5 Suggested management strategies for the Project(s) in the construction phase

Based on the discussion in the preceding sections, Table 2-5 presents issues that may arise, the risks and opportunities presented by these issues, and suggested mitigation strategies for Aviva Corporation to consider.

Section 2

Leeman

Table 2-5 Construction phase - risks and mitigation

Issue	Risks/Opportunities	Mitigation Strategies
Concerns have been raised about the location of the construction workforce camp during consultation conducted by Aviva.	<ul style="list-style-type: none"> Residents resist establishment of camp Reputation of project could be negatively affected if public perceive that not enough attention is given to this issue. Opportunity exists to set up open and transparent communication process with residents that can be utilised during the life of the camp and beyond. Opportunity to work with community to plan camp that maximises community benefit and minimises impact. 	<ul style="list-style-type: none"> It is vital that a full and extensive consultation be carried out with Leeman residents on the specifics of this issue before decisions are made so that they are well informed on the exact nature of the camp and so that they have the opportunity to work with Aviva to develop a model that works best for the company and for the town. Decision-making process on final location is transparent and communicated.
Increased demand on services	<ul style="list-style-type: none"> Impacts on town residents and camp residents in terms of availability of supplies, waiting times etc. Opportunity to develop services in camp that can be utilised by residents without negatively impacting on existing services (e.g. access to mess, sports facilities). 'Us and them' culture develops within the town. 	<ul style="list-style-type: none"> Work with existing business owners within the town to develop plans for shared resources and mitigation strategies to lessen impact.
Increased traffic in town and surrounding areas	<ul style="list-style-type: none"> Safety issues. Inconvenience to residents due to increased traffic. 	<ul style="list-style-type: none"> Strategies to reduce private employee vehicle use. Work with local police to develop strategies to minimise impact.
Increased use of recreational facilities and areas (e.g. ovals, beaches)	<ul style="list-style-type: none"> Inconvenience to residents due to increased use of recreational facilities. Opportunity to develop facilities within the camp that can be used by residents. Threat to recreational fish stock due to large increase in recreational fishing. 	<ul style="list-style-type: none"> Work with residents to determine strategies to maximise opportunities and minimise impact. Address need for additional facilities in camp design, that allows residents access without disturbing normal camp functioning.
Potential increase in anti-social behaviour	<ul style="list-style-type: none"> Potential increase in anti-social behaviour due to alcohol. Potential increases in traffic violations which could impact on workload for current police force. 	<ul style="list-style-type: none"> Consult with police in other towns with similar workforce camps to identify possible issues. Work with Leeman Police to identify risks and develop mitigation strategies. Education of staff on alcohol use etc.
Increased demand on health services	<ul style="list-style-type: none"> Current low levels of health service provision in area. Current capacity would not cope with increased demand. Safety of employees is an issue. 	<ul style="list-style-type: none"> Explore options for provision of camp facilities or invest in increased town services. Provide support for St John's Ambulance Service and the Royal Flying Doctor Service (RFDS).
Possible staffing issues in services if existing staff are drawn to opportunities provided by Aviva	<ul style="list-style-type: none"> Risk of resentment of project if other service provision suffers. 	<ul style="list-style-type: none"> Work with community to ensure communication of issue if this arises.

2.3 Possible social impacts and opportunities during the operational phase

2.3.1 Projected workforce increase

As noted in Section 1.1.1, Aviva have made projections regarding workforce residence location. It is estimated that 50 employees would reside in Leeman, including:

- 10 existing residents
- 20 new residents buying existing homes
- 20 new residents requiring new lot and house.

2.3.2 Projected impacts

Depending on family structure of employees, 40 additional could result in 140 additional residents (using a multiplier of 3.5) which equates to a 35 per cent increase in the population.

Some issues that may need to be considered for this increase in population are presented below.

- Land and housing availability at the time (2013).
- The need for extra services to be considered including:
 - Commercial;
 - Education; and
 - Health.
- There is no High School requiring any students of this age to commute to Jurien.

Section 3

Eneabba

3.1 Current Situation

The town of Eneabba is located 278 km north of Perth and about 30 km east of Leeman in the Shire of Carnamah. Eneabba was originally established to support the 'new land' farming developments in the 1950s and 1960s as a small service town. It still fulfils that role but also houses some employees at Iluka's nearby mineral sands mine and contractors who provide services to the mine. Advice from Iluka is that they have 95 employees and 290 contractors working at the mine. Many of these are housed in Single Person Quarters at Banksia House and will not have been recorded by the Census as being at their 'Place of Usual Residence'. The mine constructed a number of houses in Eneabba and Leeman, but Iluka has been disposing of these to the private market in a controlled way for several years.

3.1.1 Demographics

The population at the time of the 2006 Census was just over 200 people (ABS 2006). The breakdown of this population is set out in Table 3-1, based upon 'Place of Usual Residence'.

Table 3-1 Eneabba population 2006 Census (Place of Usual Residence)

Statistic	Males	Females	Persons
Total persons	124	79	203
Age groups:			
0-4 years	3	7	10
5-14 years	11	10	21
15-19 years	8		8
20-24 years	15	9	24
25-34 years	15	6	21
35-44 years	27	15	42
45-54 years	18	16	34
55-64 years	21	12	33
65-74 years	3	3	6
75-84 years	4		4
85 years and over	0	0	0

ABS 2006 Census data

3.1.2 Economy

Employment

Table 3-2 sets out the employment rates for people who are 15 years and older, as at the 2006 census. A high proportion of the labour force is in full time employment, being well above the WA average. There are no unemployed people in Eneabba. Clearly people who are unable to get employment in their area of skills either leave Eneabba, or do not come to the town initially.

Table 3-2 Employment rates - Eneabba

Category	Percentage of total labour force	West Australian percentage
Employed full time	83.1%	61.0%
Employed part time	11.2%	28.4%
Total percentage of people in the workforce in paid employment	94.3%	89.4%
Unemployed	nil	3.8%
Not in the labour force	16.9% (n=29)	35.6%
Labour force status not stated	n=32	

ABS 2006 Census data

Employment by industry type is shown in Table 3-3. Given the proximity of Iluka's mine, over 50 per cent of the work force in Eneabba works in the mining sector or in construction. The only other significant employment sector is in retail trade. Overall, the employment profile indicates the very limited array of services in this small town.

Table 3-3 Employment by industry type – Eneabba

Category	Males	Females	Persons	As %
Agriculture, forestry and fishing				
Mining	35	5	40	37.4%
Manufacturing				
Electricity, gas, water & waste services				
Construction	23	6	29	27.2%
Wholesale trade				
Retail trade	3	8	11	10.2%
Accommodation & food services	3	6	9	8.4%
Transport, postal & warehousing				
Information media & telecommunications				
Professional, scientific & technical services				
Administrative & support services				
Public administration & safety				
Education & training		3	3	2.8%
Health care & social assistance	6		6	5.6%
Arts & recreation services				
Other services	3		3	2.8%
Inadequately described/Not stated	3	3	6	5.6%
Total	76	31	107	100%

ABS 2006

Section 3

Eneabba

Small businesses

The Shire of Carnamah (2008) provides the following information on services in Eneabba. 'The Eneabba townsite offers a general store, roadhouse (fuel and meals), tavern (counter meals), mechanical services (RAC) and smash repairs. Emergency services include a volunteer ambulance service, a Silver Chain Nursing Post, the State Emergency Service (SES), and the Bush Fire Brigade. The Sporting and Recreational Club has lawn bowling and darts, and is often open on a Friday night offering bar and meal facilities.'

Accommodation

- Lake Indoon B&B
- Eneabba Traveller's Rest
- Western Flora Caravan Park

3.1.3 Housing

As at the 2006 census, over 67 per cent of the 73 dwellings in Eneabba were either owned outright or were being purchased (ABS 2006 Census data). A total of 17 dwellings were being rented.

The average house price for Eneabba for the period 31 March 2007 to 31 March 2008 was \$165,000, however only two (2) houses sold during this period (RIEWA). There has been a 49 per cent growth in the average price over the past five years. However, all of this growth occurred from 2007 when Iluka increased operations – this resulted in a large spike in house prices.

3.1.4 Community Services

Education

Eneabba's primary school has 38 students, as seen in Table 3-4. This is small school with a relatively high number of staff.

Table 3-4 Profile of Eneabba Primary School

Item	Eneabba Primary
Enrolment (2008)	38*
Indigenous %age	2.6%
Administration staff	2
Teaching staff	5
Support staff	5
Total FTEs	5.3

Department of Education and Training WA – Schools Online

Although student numbers at Eneabba Primary school have stayed stable over the 5 year period between 2004 and 2008 as shown in Table 3-5, this school population is barely viable according to Department of Education and Training standards.

Table 3-5 Student numbers at Eneabba Primary School

Category	2004	2005	2006	2007	2008
Pre-compulsory	7	4	2	4	8
Primary	30	22	32	31	28
Total	37	26	34	25	36*

* Note there is a discrepancy in the number of students, sourced from the Department of Education and Training – Schools Online website

Students in high school years will need to either board away from home, or attend to Year 11 in Carnamah, and then board away from home. However, in looking at the demographics, it would seem that people will leave Eneabba when their children reach high school age. This is a common trend in many country towns. As support for this assertion, it is noted that Carnamah District High School has only 12 students enrolled in Year 11.

Health

GP services are available in Carnamah and Jurien, and on certain days, in Leeman. The nearest major medical centre for all the towns in the region is in Dongara. Eneabba does have an ambulance service which takes patients to the Dongara 24 hour accident and emergency part of the medical centre. Eneabba also has a Silver Chain Nursing Post, common in small towns, which means nurses are available for consultation during the weekdays.

Community Safety

Eneabba is a safe town and the community has experienced little in the way of crime since April 2007. The major criminal disturbances in the community were three dwelling burglaries, reported in April, July and October 2007. One motor vehicle has been stolen in 2008. Graffiti and robbery have not been an issue for residents in the past 12 months.

Recreation Facilities

Recreation facilities in town comprise of a swimming pool, oval and recreation centre and sporting club. These facilities cater for lawn bowls, badminton, squash, darts and pool. Lake Indoon and camping grounds are located approximately 12km west of Eneabba.

3.2 Possible social impacts during the construction phase

It is not envisaged that the township of Eneabba will be impacted significantly during the construction phase. There may be some increase of trade to commercial businesses (e.g. the roadhouse), especially if resources in Leeman are stretched. The increase in traffic in the area will also have some impact in surrounding areas but probably not the township itself.

3.3 Possible social impacts and opportunities during the operational phase

Aviva’s current projections are ten (10) employees will be located in Eneabba with eight (8) of these being existing residents. A net additional two employees and families will provide a marginal benefit for the town. .

Section 4

Green Head

4.1 Current situation

The town of Green Head is located approximately 13 km south of Leeman on the coast. Like its neighbour town Leeman, it is predominantly a fishing village that is well known for its crayfish and deep sea fishing. Landcorp is currently releasing land for a residential development one kilometre from the town centre – ultimately the development will consist of 128 lots (sourced from Landcorp website). Green Head is in the Shire of Coorow.

4.1.1 Demographics

As shown in Table 4-1, the population of Green Head is 248, based on 'Place of Usual Residence'. Nearly half the population is over 55, which suggests that Green Head is a retirement destination. As a further indication of older demographics, the town does not have a primary school.

Table 4-1 Green Head population 2006 Census (Place of Usual Residence)

Statistic	Males	Females	Persons
Total persons	140	108	248
Age groups:			
0-4 years	3	6	9
5-14 years	22	6	28
15-19 years	5	4	9
20-24 years	3		3
25-34 years	11	4	15
35-44 years	14	14	28
45-54 years	21	21	42
55-64 years	25	33	58
65-74 years	31	17	48
75-84 years	4		4
85 years and over	3	3	6

ABS 2006 Census data.

4.1.2 Economy

Employment

Table 4-2 sets out the employment rates for people who are 15 years and older, as at the 2006 Census.

Green Head's economy is dominated by rock lobster fishing, mining, retirement housing and tourism. Overall, Green Head's labour force percentage is below the WA average, which again suggests that many people within the town are retired. Also to note in Table 4-2 is the relatively high unemployment percentage, which is not easily explained, unless they are people who work in the Rock Lobster industry. When the census was completed in July 2006, it was the 'off-season' for the industry.

Table 4-2 Employment rates - Green Head

Category	Percentage of total labour force	West Australian percentage
Employed full time	47.3%	61%
Employed part time	9.6%	28.4%
Total percentage of people in the workforce in paid employment	56.9%	89.4%
Unemployed	9.6%	3.8%
Not in the labour force	53.0% (n=113)	35.6%
Labour force status not stated	n=9	

ABS 2006 Census data

The nature of the employment in Green Head is shown in Table 4-3. Of those in employment in Green Head there is an even distribution between the percentage involved in the mining, construction, fishing and retail trade industries.

Table 4-3 Employment by industry type - Green Head

Category	Males	Females	Persons	As %
Agriculture, forestry and fishing	9	3	12	15%
Mining	13		13	16.2%
Manufacturing	5	4	9	11.3%
Electricity, gas, water & waste services				
Construction	12	3	15	18.6%
Wholesale trade	3		3	3.8%
Retail trade	6	6	12	15%
Accommodation & food services				
Transport, postal & warehousing				
Information media & telecommunications				
Professional, scientific & technical services		9	9	11.3%
Administrative & support services				
Public administration & safety				
Education & training		4	4	5%
Health care & social assistance				
Arts & recreation services				
Other services				
Inadequately described/Not stated	3		3	3.8%
Total	51	29	80	100%

ABS 2006 Census data

Section 4

Green Head

Small business

The Shire of Coorow (2008) lists thirteen (13) small businesses in Green Head, including:

Retail

- Green Head General Store – Fuel & Liquor
- Crystal Body Shop – Giftware
- Everyday Clothing

Accommodation

- Macca's Mooring – Bed & Breakfast
- Green Head Caravan Park

Other

- Green Head Gas
- Green Head Outdoor Services
- Ray White Real Estate
- A Coastal Cut - Lawn Mowing
- Green Head Sands
- Green Head Timber Supplies (Jo & Matt Westwood)
- Green Head Plumbing & Gas
- Sea Lion Charters

4.1.3 Housing

There is a very high rate of home ownership in Green Head with 81 per cent of homes fully owned or being purchased. Twenty (20) dwellings were being rented at the time of the 2006 census. However, of 295 dwellings in the town, only 92 (31%) were occupied at the time of the Census, which confirms the reported use of many dwellings as holiday homes, or as residences maintained only during the Rock Lobster harvesting season.

Real Estate Agents report that some of the owners of these holiday homes do rent them out for short term rentals, but reserve them for their own use at peak holiday times. As such, securing long-term (more than 12 months) rental could be difficult.

The average house price for Green Head for the period 31 March 2007 to 31 March 2008 was \$427,000 with six (6) houses selling during this period (RIEWA). There has been a 23 per cent growth in the average price over the past five years.

4.1.4 Community Services

Education

There is no school in Green Head. Primary school students attend nearby Leeman Primary School.

Community Safety

Green Head has experienced almost no crimes over the last 12 months. Only one reportable incident, an assault, was reported in September 2007 (WA Police statistics).

Health

Green Head has no medical facilities available in the town for its residents. For medical advice residents must go to Jurien Medical Centre or the Dongara Medical Centre. Green Head does have one ambulance which takes people to the Dongara 24 hour accident and emergency centre.

Recreation Facilities

There appear to be limited recreation facilities within the town. However, recreational facilities are available within the Shire of Coorow Leeman, and in Jurien.

4.2 Possible social impacts and opportunities during the construction phase

The impacts on Green Head should be minimal during the construction phase. There may be some flow over of the Leeman impacts on public areas and services if Leeman cannot cope with demand. Residents will be subject to the impact of increased road usage on surrounding areas but not within the township itself.

4.3 Possible social impacts and opportunities during the operational phase

4.3.1 Projected workforce increase

It is estimated that 40 employees would reside in Green Head, including:

- 10 existing residents;
- 10 new residents buying existing homes; and
- 20 new residents requiring new lot and house.

4.3.2 Projected impacts

Depending on family structure of employees, 30 additional could result in 105 additional residents (using a multiplier of 3.5) which equates to a 42 per cent increase in the population.

Some issues that may need to be considered for this increase in population would be:

- Land and housing availability at the time (2013)
- The need for extra services to be considered including:
 - Commercial

Section 4

Green Head

- Health
 - There is no primary school or high school in Green Head. Primary students go to nearby Leeman and High School students commute to Jurien.

Section 5

Towns outside immediate project area

5.1 Introduction

The following sections include information on the towns of:

- Jurien;
- Dongara;
- Carnamah; and
- Coorow.

While these towns are essentially outside of the project impact area, basic profile information is provided. As the impact of the projects on these towns will be minimal, sections on impacts of the project have not been included.

5.2 Jurien Bay

5.2.1 Current Situation

The town of Jurien is located 69 km south of Leeman and 266 km north of Perth, and is in the Shire of Dandaragan. It is the administrative centre for the Shire and also for the larger West Midlands Sub-Region. The town is located about 55 km by road from the Projects location.

Currently the main industry in the town is rock lobster fishing, although this industry operates for only 7 months of the year. Otherwise, the town is a popular holiday destination, and is the administrative and service centre for the Sub-Region. The Shire of Dandaragan is headquartered in the town. While Jurien is a popular holiday spot, the next several years will see extensive development both in residential blocks and tourism. Local real estate offices list four major developments: Beachridge, Marine Fields, Seagate and Cervantes Edge Resort. Beachridge is part of a 2000 hectare development being undertaken by the Ardross Group of Companies. The developers believe this development could see the Jurien Bay population increase from 1,200 to 25,000 people over the next 30 to 40 years (Ardross Estates).

5.2.2 Demographics

The demographics for Jurien are shown in Table 5-1. These data come from the 2006 Census are based upon 'Place of Usual Residence'. With a population of nearly 1,200, Jurien has by far the largest population of all four towns considered in this Report and with the planned developments this is set to increase substantially.

Section 5

Towns outside immediate project area

Table 5-1 Jurien population 2006 Census

Statistic	Males	Females	Persons
Total persons	601	574	1,175
Age groups:			
0-4 years	37	33	70
5-14 years	86	82	168
15-19 years	19	14	33
20-24 years	31	26	57
25-34 years	65	72	137
35-44 years	91	80	71
45-54 years	76	74	150
55-64 years	73	69	142
65-74 years	80	77	157
75-84 years	37	34	71
85 years and over	6	13	19

ABS 2006 Census data

5.2.3 Economy

Jurien’s economy revolves around general services to the sub-region, the rock lobster industry, agriculture, tourism and local administration (the Shire of Dandaragan is headquartered in the town). The profile of the workforce, including workforce participation, and unemployment is very similar to state averages. However, the employed component of the labour force, as seen in Table 5-2, is marginally below the state average, and the percentage of people not in the workforce is marginally higher. This could be because Jurien, as with other coastal towns in the area is a retirement destination, particularly for people from the farming areas in the hinterland.

Table 5-2 Employment rates – Jurien

Category	Percentage of total labour force	West Australian percentage
Employed full time	58.4%	61%
Employed part time	27.2%	28.4%
Total percentage of people in the workforce in paid employment	85.6%	89.4%
Unemployed	4.1%	3.8%
Not in the labour force	39.4% (n=369)	35.6%
Labour force status not stated	n=83	

ABS 2006 Census data

As shown in Table 5-3, most of those in employment are either in construction (13.2%), retail trade (11.3%), accommodation and food services (12.2%) and public administration and safety (11.5%).

Section 5

Towns outside immediate project area

The broad cross-section of occupations in Jurien highlights that the town has a sub-regional role as a service centre when compared to the other three, much smaller towns. The number of people in construction is significant – the town is growing and the array of services and accommodation is expanding.

Table 5-3 Employment by industry type – Jurien

Category	Males	Females	Persons	As %
Agriculture, forestry and fishing	23	3	26	5.8%
Mining	18		18	3.9%
Manufacturing	30	7	37	8%
Electricity, gas, water & waste services	13		13	2.9%
Construction	53	8	61	13.2%
Wholesale trade	3		3	.7%
Retail trade	15	37	52	11.3%
Accommodation & food services	10	46	56	12.2%
Transport, postal & warehousing	10		10	2.1%
Information media & telecommunications				
Financial and insurance services		9	9	1.9%
Rental, hiring and real estate services	6	8	14	3.1%
Professional, scientific & technical services	4	11	15	3.3%
Administrative & support services		8	8	1.7%
Public administration & safety	33	20	53	11.5%
Education & training	9	24	33	7.3%
Health care & social assistance		16	16	3.4%
Arts & recreation services				
Other services	7	6	13	2.9%
Inadequately described/Not stated	19	3	22	4.8%
Total	253	206	459	100%

ABS 2006 Census data

Small business

Jurien has sufficient critical mass to be able to provide a wide range of services, and the Shire of Dandaragan (2007) lists over 100 small businesses in Jurien. Examples in two categories are shown below.

Retail

- Jurien Bakery
- Love me tender butchery
- Grehans Pharmacy
- Tiges Surf Shop
- Sea sport and Tackle

Section 5

Towns outside immediate project area

- Jurien Bay Fashion
- Printek Computer Services
- Jurien Technology Centre
- Crystal Body Shop – Giftware
- Everyday Clothing
- IGA Supermarket
- Jurien Hardware
- Home Hardware

Accommodation

- Jurien Apex Recreation Camp
- Jurien Bay Beachfront Holiday Units
- Jurien Bay Beachfront Chalets
- Jurien Bay Caravan Park
- Jurien Chalets
- Jurien Bay Hotel Motel
- Jurien Bay Seaside Rentals
- CWA Cottage
- The Heights B & B
- The Lady C Homestay

5.2.4 Housing

As at the 2006 Census 60 per cent of dwellings in Jurien Bay were fully owned or being purchased. A total of 167 dwellings were being rented. Of a total of 921 dwellings in the town, only 514 (56%) were occupied at the time of the Census, which confirms the reported use of some dwellings as holiday homes, or as residences maintained only during the Rock Lobster harvesting season. One Real Estate Agency in the town stated that it is managing about 200 properties, which suggests a strong, but often short-term rental market.

The average house price for Jurien Bay for the period 31 March 2007 to 31 March 2008 was \$450,000 with 35 houses selling during this period (RIEWA). This represents 4 per cent of the dwellings in the town which is evidence of a functioning property market.

Section 5

Towns outside immediate project area

5.2.5 Community Services

Education

Jurien Bay District High School caters for students from Jurien, Leeman, Green Head and Cervantes and the surrounding farming districts. The school provides an educational service for a range of students from Kindergarten to Year 10. There are also opportunities for suitable year 11 and 12 students to undertake various Vocational Education and Training (VET) and Structured Workplace Learning (SWL) courses. Jurien Bay DHS also offers school based courses.

There are 313 students currently enrolled at Jurien Bay District High School (see Table 5-4. Although this town is larger than the others, the primary school and high school are combined on the same site and the school statistics are not separated. Indigenous students make up 4.6 per cent of the school population.

Table 5-4 Profile of Jurien Bay District High School

Item	Jurien Primary
Enrolment (2008)	313* (FT and P/T)
Indigenous %age	4.6%
Administration staff	3*
Teaching staff	22*
Support staff	14*
Total FTEs	32.0*

* Includes staff from high school; Department of Education and Training – Schools Online. Note that there is a discrepancy in enrolment numbers between the 2008 numbers and the 2004 to 2008 trend data.

As shown in Table 5-5, the number of students who attend Jurien Bay District High School has increased a little over the five year period from 276 to 292 full-time students. This relatively small total increase (5.7%) obscures an increase of 11.5 per cent in the primary years, with no trend in high school enrolments, for the reasons discussed above. As in other country towns, parents of high school students either need to send their children away to complete high schooling, or leave town for a location with high school facilities. The drop-off in enrolments after the primary years suggests that both of these strategies are employed.

Table 5-5 Student numbers at Jurien Bay District High School

Category	2004	2005	2006	2007	2008
Pre-compulsory	26	19	22	21	18
Primary	153	152	156	172	176
Lower secondary (yrs 8-9)	89	81	80	76	88
Upper secondary (yrs 10-12)	8	7	11	9	10
Total	276	259	269	278	292*

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Jurien Bay DHS is large enough for numeracy and reading performance to be available. As shown in Table 5-6, the achievements of primary school students at Jurien DHS are usually above the state average.

Table 5-6 Numeracy and reading standards at Jurien Bay DHS

Capability / Year	Percentage of Students Achieving the Benchmark (state average in brackets)		
	2005	2006	2007
Numeracy			
Year 3	100 (88)	83 (87)	93 (84)
Year 5	90 (85)	82 (84)	89 (85)
Year 7	92 (81)	100 (81)	93 (81)
Reading			
Year 3	100 (93)	79 (93)	93 (94)
Year 5	95 (89)	100 (90)	100 (93)
Year 7	92 (85)	83 (81)	89 (81)

Source: Department of Education and Training – Schools Online website

Community Safety

Jurien had a total of 24 reported crimes for the period April 2007/2008. The most common crime was burglary, where there were 9 occurrences. Only 2 motor vehicles have been stolen in the town. Jurien residents have not been affected by graffiti or robbery.

Health

Jurien has a pharmacy and a General Practice in the town (operated by Gemini Pty Ltd), which provides a full-time service. There is also an ambulance service which takes people to the Dongara 24 hour accident and emergency centre. The town has an airstrip for access by the Royal Flying Doctor Service.

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5.3 Dongara

5.3.1 Current Situation

Dongara (including Port Denison) is located 359 km north of Perth and is the administrative Centre for the Shire of Irwin. Dongara is the largest of the towns profiled in this study.

5.3.2 Demographics

The 2006 census data for Dongara (including Port Denison) are presented in Table 5-7.

Table 5-7 Dongara population 2006 Census (Place of Usual Residence)

Statistic	Males	Females	Persons
Total persons	1,218	1,128	2,346
Age groups:			
0-4 years	86	55	141
5-14 years	181	150	331
15-19 years	58	56	114
20-24 years	56	29	85
25-34 years	121	128	249
35-44 years	160	172	332
45-54 years	175	150	325
55-64 years	150	174	324
65-74 years	136	123	259
75-84 years	85	72	157
85 years and over	10	19	29

ABS 2006

5.3.3 Economy

Table 6-2 sets out the employment rates for people who are 15 years and older, as at the 2006 census.

Table 5-8 Employment rates – Dongara (ABS 2006 census)

Category	Percentage of total labour force	West Australian percentage
Employed full time	51.5%	61%
Employed part time	32.1%	28.4%
Unemployed	7.7%	3.8%
Not in the labour force	n= 762	
Labour force status not stated	n= 149	

ABS 2006

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Towns outside immediate project area

Employment types in Dongara are shown in Table 5-9. Agriculture and fishing (rock lobster) has the most employees, which recognises the town's role as one of the bases for rock lobster fishing and processing.

Table 5-9 Employment by Industry Type – Dongara

Category	Males	Females	Persons	As %
Agriculture, forestry and fishing	82	32	114	13%
Mining	72	12	84	9%
Manufacturing	46	20	66	7%
Electricity, gas, water & waste services	5	0	5	1%
Construction	99	11	110	12%
Wholesale trade	7	4	11	1%
Retail trade	21	77	98	11%
Accommodation & food services	24	62	86	10%
Transport, postal & warehousing	35	4	39	4%
Information media & telecommunications	0	0	0	0%
Financial and insurance services	0	12	12	1%
Rental, hiring and real estate services	4	10	14	2%
Professional, scientific & technical services	11	9	20	2%
Administrative & support services	7	19	26	3%
Public administration & safety	25	19	44	5%
Education & training	5	45	50	6%
Health care & social assistance	6	47	53	6%
Arts & recreation services	0	0	0	0%
Other services	16	17	33	4%
Inadequately described/Not stated	17	5	22	2%
Total	482	405	887	100%

ABS 2006

5.3.4 Housing

In the 2006 Census there were a total of 1,239 dwellings of which 79.5 per cent were separate houses, 12.4 per cent were semi-detached, row or terrace houses, townhouses etc, 0.3 per cent were flats, units or apartments and 7.8 per cent were other dwellings. Approximately 79 per cent of private dwellings in Dongara were occupied at the time of the Census.

Approximately 70 per cent of dwellings in Dongara are either owned outright or are being purchased (ABS 2006). This is slightly higher than the WA figure of 64 per cent (ABS Quick Stats 2006). This suggests a relatively stable population base in the town.

The median house price in Dongara was \$473,542 and twelve homes were sold in the period between 30 June 2007 and 30 June 2008. There has been an 18.7 per cent growth in the average house price over the past five years.

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5.3.5 Community Services

Education

The Dongara District High School is services the twin towns of Dongara and Port Denison as well as students bussed in on two services from the surrounding Irwin Shire. The current statistics of the school are presented in Table 5-10. The school provides an educational service for a range of students from Kindergarten to Year 12. Year 10 and Senior School students have the opportunity to enrol in Certificate 1 and 11 in Information Technology through TAFE. A group of year 10 and 11 students participate in a TAFE Link program in Certificate I in Automotive or Sport and Recreation. Student participating in this program travel to Geraldton and attend Central West TAFE 1 day per week. This is delivered on site by a qualified teacher. The school operates an on site Vocational Education Program for years 10-12. A small number of year 11 and 12 students are enrolled in a mixed mode delivery including studying through SIDE

The total number of students enrolled at Dongara District High School is 451. Of this over 60% of students were in pre-primary and primary year groups. Indigenous students make up 1.7 per cent of the school population. As the school offers secondary education, the numbers should not change significantly as may be expected in smaller towns offering only primary education facilities. Student numbers have been relatively stable since 2004, with a slow increase until 2007, and a slight decline in 2008.

Table 5-10 Profile of Dongara District High School

Item	Dongara District High School
Enrolment (2008)	451 (FT and P/T)
Indigenous %age	1.7%
Administration staff	4*
Teaching staff	33*
Support staff	21*
Total FTEs	48.9*

* Includes staff from high school

DET Schools Online

Community Safety

Dongara had a total of 14 reported crimes from January to September 2008. Of these, seven were assaults, three motor vehicle thefts and four burglaries. In the 2007 calendar year, 37 crimes were reported in total, 16 of which were burglaries and 13 assaults.

Recreation Facilities

The Irwin Recreation Centre in Dongara is undergoing extension from a one to a three court facility with gymnasium, function centre, new commercial standard kitchen, new tennis clubhouse / meeting room and new change rooms / ablutions. The centre includes tennis courts, outside netball / basketball courts and football oval. Other recreation facilities in town include the Dongara golf club and the Denison Bowling Club. Numerous sporting clubs exist in the Irwin Shire including Dongara Gymnastics, Badminton Club, Dongara Basketball Association, Cricket Club, Dongara Darts Association, Horseriding Club, Dongara Football Club, Dongara Netball Club, and Swimming Club.

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Towns outside immediate project area

Health

The Dongara Eneabba Mingenew Health Service is located in the town of Dongara and offers 24 hour accident and emergency service and 24-48 hour acute care. As noted previously, the ambulance service may transport patients from Jurien, Eneabba, Leeman and Green Head to Dongara. Other services offered to the community include, nursing care and home visiting service (post acute care, palliative services etc), home help (assistance with tasks such as cleaning and food preparation, attending appointments, banking, shopping etc), home maintenance and gardening (installation of safety aids and safe home environment), meals on wheels and social support services (transport for socially isolated), Audiology services, Speech Pathology Services, and Physiotherapy.

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5.4 Carnamah

5.4.1 Current situation

The Carnamah District is predominantly a wheat and sheep farming area, with associated agricultural business and services. The Carnamah town has a population of approximately 360 people (See Section 5.4.2 regarding demographic data), with other surrounding towns being of similar size. The Shire of Carnamah is headquartered in the town.

5.4.2 Demographics

Demographic data from the 2006 Census are presented in Table 5-11. In the 2006 Census, there were 359 persons usually resident in Carnamah, with 47.6% being males and 52.4% being females. Of the total population in Carnamah, 29 (8.1%) were Indigenous persons. Approximately 24.8 per cent of the population were children aged between 0-14 years, and 25.3 per cent were persons aged 55 years and over. The median age of persons in Carnamah was 36 years, compared to 37 years for Australia as a whole.

Table 5-11 Carnamah population 2006 Census (Place of Usual Residence)

Statistic	Persons
Total persons	359
Males	171
Females	188
Indigenous persons	29
Age groups:	
0-4 years	20
5-14 years	69
15-24 years	43
25-54 years	135
55-64 years	41
65 years and over	50
Median age of persons	36

ABS 2006

5.4.3 Economy

Employment

Table 5-12 sets out the employment rates for people who are 15 years and older, as at the 2006 Census. Sixty eight (68) per cent of the population between 15 and 64 years of age were in the workforce. Of these, 68 per cent were employed full-time, 21 per cent were employed part-time, 6 per cent were employed but away from work or employed but did not state their hours worked and 5 per cent were unemployed.

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Table 5-12 Employment rates – Carnamah (ABS 2006 census)

Category	Number	Percentage of total labour force	Australian percentage
Employed full time	113	68%	61%
Employed part time	35	21%	28%
Employed away from work or employed hours not stated	10	6%	6%
Unemployed	9	5%	4%
Not in the labour force	90	32%	39%

ABS 2006

The types of employment for people in Carnamah are shown in Table 5-13. At the 2006 Census, the most common industries of employment for persons aged 15 years and over usually resident in Carnamah were wholesale trade and retail trade (32%), public administration (12%) and farming (11%).

Table 5-13 Employment by Industry Type – Carnamah

Category	Persons	As %
Agriculture, forestry and fishing	10	11%
Mining	6	7%
Manufacturing	3	3%
Electricity, gas, water & waste services	3	3%
Construction	6	7%
Wholesale trade	18	20%
Retail trade	11	12%
Accommodation & food services	0	0%
Transport, postal & warehousing	3	3%
Information media & telecommunications	0	0%
Financial and insurance services	3	3%
Rental, hiring and real estate services	0	0%
Professional, scientific & technical services	0	0%
Administrative & support services	0	0%
Public administration & safety	11	12%
Education & training	3	3%
Health care & social assistance	0	0%
Arts & recreation services	0	0%
Other services	12	13%
Inadequately described/Not stated	3	3%
Total	92	100%

ABS 2006

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Towns outside immediate project area

5.4.4 Housing

Census data show a total of 184 private dwellings in Carnamah, of which 146 (79%) were occupied private dwellings (ABS Quick Stats). The data show 93.8 per cent of private dwellings were separate houses, 0.0 per cent were semi-detached, row or terrace houses, townhouses, 5.5 per cent were flats, units or apartments and 2.7 per cent were other dwellings.

Over 57 per cent of private dwellings were fully owned or being purchased and 39 per cent were rented at the 2006 census. The number of sales in 2008 (up to 30 June 2008) was 14, and the median house price in Carnamah is \$101,500. There has been a 27.6 per cent growth in the average price over the past five years (REIWA 2008).

5.4.5 Community Services

Education

Carnamah District High School caters for children from Kindergarten through to Year 11. The current statistics of the school are presented in Table 5-14.

Table 5-14 Profile of Carnamah District High School

Item	Carnamah District High School
Enrolment (2008)	145 (FT and PT)
Indigenous number (%age)	23 (15.8%)
Administration staff (FTEs)	3 (3.0)
Teaching staff (FTEs)	15 (13.3)
Support staff (FTEs)	9 (6.2)
Total (FTEs)	27 (22.5)

DET Schools On-line

Of the 145 students enrolled, approximately 56% were of primary or pre-primary year groups. The majority of secondary school students were in the years 8 to 10 (83%). Student enrolment trends suggest a declining total school population, particularly in the lower secondary school groups since 2004.

Community Safety

A police station is located in the town. Five crimes were reported in the 2007 calendar year, all of which were assaults. Four of these occurred in January 2007. From January 2008 to September 2008 five crimes were reported, three relating to burglary, one assault and one motor vehicle theft. Generally, the town is safe with a low level of infringement.

Recreation Facilities

- Swimming Pool
- Bowling Club and Green
- Carnamah Recreation Centre and Niven Park Recreational Grounds (Tennis, Badminton, Cricket, Hockey, Netball, Football, Basketball)

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- Outdoor netball and basketball courts
- Youth and Community Centre
- Golf Club

Health

The health services in Carnamah comprise of a doctor's surgery operated on Tuesday and Wednesday afternoons and physiotherapy and podiatry services on booking basis. Further General Practice medical facilities and dental services are located in Three Springs. The closest Silver Chain Nursing Post is located in Eneabba. Services such as palliative care, home visiting service home help and population health services are offered through North Midlands Health Service.

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Towns outside immediate project area

5.5 Coorow

5.5.1 Current situation

Coorow is small town located on the railway line between Perth and Geraldton. It is about 270 km north of Perth. It is a service centre for surrounding grain and sheep/cattle agricultural businesses. The Shire of Carnamah is headquartered in the town. The Shire of Coorow consists of several town-sites including Leeman and Green Head.

5.5.2 Demographics

The demographic data for Coorow are shown in Table 5-15. At the time of census in 2006, 176 people recorded Coorow as their Place of Usual Residence. Of these 54 per cent were males and 46 per cent females. There were no Indigenous persons recorded as living in Coorow. Approximately 25 per cent of the population were children aged between 0-14 years, and 27 per cent were persons aged 55 years and over. The median age of persons in Coorow was 38 years, compared to 37 years for Australia as a whole.

Table 5-15 Coorow population 2006 Census (Place of Usual Residence)

Statistic	Persons
Total persons	176
Males	95
Females	81
Indigenous persons	0
Age groups:	
0-4 years	9
5-14 years	35
15-24 years	9
25-54 years	75
55-64 years	28
65 years and over	19
Median age of persons	38

ABS 2006

5.5.3 Economy

Employment

Table 5-16 sets out the employment rates for people who are 15 years and older, as at the 2006 census.

Seventy two (72) per cent of the population between 15 and 64 years of age were in the workforce. Of these, 63 per cent were employed full-time, 18 per cent were employed part-time, 16 per cent were employed but away from work or employed but did not state their hours worked, and 4 per cent were unemployed.

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Table 5-16 Employment rates – Coorow (ABS 2006 census)

Category	Number	Percentage of total labour force	Australian percentage
Employed full time	60	63%	61%
Employed part time	17	18%	28%
Employed away from work or employed hours not stated	15	16%	6%
Unemployed	4	4%	4%
Not in the labour force	31	28%	39%

ABS 2006

Table 5-17 shows the distribution of employment type by people living in the town. At the 2006 Census, the most common industries of employment for persons aged 15 years and over usually resident in Coorow were farming (27%), wholesale trade and retail trade (25%), public administration (17%) and construction (17%).

Table 5-17 Employment by Industry Type – Coorow

Category	Persons	As %
Agriculture, forestry and fishing	14	27%
Mining	0	0%
Manufacturing	0	0%
Electricity, gas, water & waste services	0	0%
Construction	9	17%
Wholesale trade	6	12%
Retail trade	7	13%
Accommodation & food services	3	6%
Transport, postal & warehousing	4	8%
Information media & telecommunications	0	0%
Financial and insurance services	0	0%
Rental, hiring and real estate services	0	0%
Professional, scientific & technical services	0	0%
Administrative & support services	0	0%
Public administration & safety	9	17%
Education & training	0	0%
Health care & social assistance	0	0%
Arts & recreation services	0	0%
Other services	0	0%
Total	52	100%

ABS 2006

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Towns outside immediate project area

Small businesses

According to the Shire of Coorow there are currently 17 services in Coorow including:

Retail

- Povers Rural Traders – Hardware and Rural Supplies
- Australia Post – private agency
- Family Shopping Centre – General Grocery & Liquor Store
- Coorow Roadhouse
- Coorow Highway Store
- Wesfarmers
- Turana Nominees T/A Cunningham's Ag – Machinery and Elders Agent
- Windmills, Concrete, Handyman

Accommodation/Hospitality

- Coorow Hotel
- Farmstay, Wildflowers & Emus "Mingaree"

Other

- R P Johns & Co – Cartage Contractor
- Western Grey Spraying
- Comley's Bobcat & Tip Truck Hire
- SJ & MJ Girando – Builder
- S&L Electrics – Electrical contractor
- Western Flora Commercial Wildflower Nursery
- Coorow Seed Cleaners

5.5.4 Housing

Census data show a total of 82 private dwellings in Coorow, of which 68 (83%) were occupied private dwellings (ABS Quick Stats). The data show that all of the dwellings were separate houses.

In Coorow, 53 per cent of occupied private dwellings were fully owned, 19 per cent were being purchased and 29 per cent were rented. The median house price in Coorow is \$140,000. There are 7 sales recorded for 2008 (30 June 2008) and there has been a 29.5 per cent growth in house prices over the last five years.

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5.5.5 Community Services

Education

The current statistics for Coorow primary school is presented in Table 5-18. No indigenous students were noted as enrolled. Trends for enrolment show a steady decline in student numbers since 2004.

Table 5-18 Profile of Coorow Primary School

Item	Coorow Primary School
Enrolment (2008)	45 (FT and PT)
Indigenous enrolment (%age)	0 (0%)
Administration staff (FTEs)	1 (1.0)
Teaching staff (FTEs)	5 (2.8)
Support staff (FTEs)	5 (2.8)
Total staff (FTEs)	11 (6.8)

DET Schools Online

Community Safety

In the 2007 Calendar year, three crimes (one assault and two burglaries) were reported, reflecting a safe town with a low level of infringement. The nearest police station is Carnamah Police station.

Recreation Facilities

Coorow oval, Maley Park is used locally by the Football Club, Cricket Club, and the hockey field at the end of the oval is used by the local hockey club. The oval is also used for Netball in the winter and in summer it is used by the Coorow Tennis Club with 6 Tennis courts.

Other recreational facilities include a semi-private Golf Course (Coorow Golf Club), swimming pool and public library.

Health

The health facilities in Coorow comprise of a medical centre/nursing post with service provision from a doctor in Three Springs every Wednesday morning. The closest hospital is Three Springs Hospital and dentist is also located at Three Springs. Speech Pathology services are available on booking basis.

Section 6

Indigenous Issues

6.1 Indigenous people's views about the Projects

As the Indigenous engagement for this project was conducted by Central West Coal Pty Ltd, discussion is limited to the issues raised during that process.

On 31 March 2008 it is reported in the Project stakeholder consultation records that a meeting was held with the Southwest Aboriginal Land and Sea Council representing the Yued Group. The issues raised at that meeting were:

- Indigenous employment opportunities and training; and
- Heritage Agreement

Central West Coal Pty Ltd has conducted Aboriginal Heritage Surveys for the Project Area. Further discussions would be required with Indigenous groups to identify need and develop education/employment strategies and targets.

6.2 Indigenous population in the Sub-Region

The Aboriginal population across the three towns of Leeman, Green Head and Eneabba is very low with only 20 people of Aboriginal descent being identified at the 2006 Census. Jurien Bay recorded 26 Aboriginal people. Overall, there are few Indigenous people living within the three shires of main interest, with over half the total (75) living in Dandaragan Shire (ABS 2006 Census data).

Inclusion of the wider region (rural shires north and south of Geraldton and extending to the drier areas of Morawa and Perenjori) has been done in the event that Aviva Corporation is planning actively to encourage Indigenous employment in its operations.

The population data for the Northern Agricultural Region (as defined by the ABS) are presented in Table 6-1. Indigenous persons make up just over 4 percent of the wider regional population. The highest percentage of these is under 14 years of age, with 309 people of working age.

Table 6-1: Indigenous population compared with non-Indigenous

Indicator	West Midlands		Wider Northern Agricultural area	
	Indigenous	Total	Indigenous	Total
Population (place of usual residence on Census)				
Total (percentage of total)	134 (2.8%)	4,835	359 (4.3%)	8,403
Males (percentage)			163 (3.7%)	4,450
Females (percentage)			196 (4.9%)	3,953
%age 0-14 YO			187 (9.9%)	1,882
%age 15-64 YO			309 (5.7%)	5,455
%age 65 YO and older			10 (0.9%)	1,067

ABS 2006 Census data

Based on these demographic data, it will not be easy to attract residential Indigenous employment in the Project(s), although there is an opportunity to recruit people for the construction phase.

Section 7

Recommendations

7.1 Recommendations for the Construction Phase

Table 2-5 presents issues, risks and opportunities that may arise as result of locating the construction camp immediately adjacent to Leeman. The suggested Mitigation Strategies in that table are reworked below as recommendations for Aviva's consideration. These apply both to a 200 person camp, and to a 600 person camp that is assumed to be located adjacent to Leeman.

7.1.1 Formalising the consultation arrangements

- Establish and resource a formal Community Group that is empowered to provide advice to Aviva on all aspects of the construction process as it will affect Leeman. The Group should include as a minimum representation from the Shire, the Leeman community, key service agencies (Health, Education, Policing), local business interests, and social and sporting interests.
- The remaining recommendations can be implemented by Aviva Corporation through the workings of this Community Group.

7.1.2 Camp location, design and operating model

- Undertake a full and extensive consultation with Leeman residents on the specifics of camp design and functioning before irreversible decisions are made.
- Develop a model that works best for the company and for the town.
- Ensure that the decision-making process on final location, design and operation is transparent and communicated.
- Address community's need (if any) for additional facilities in camp design, that allows residents access without disturbing normal camp functioning

7.1.3 Managing impact on local services

- Work with existing business owners within the town to develop plans for shared resources and mitigation strategies to lessen impact, and capture opportunities.
- Explore options for provision of camp facilities or invest in increased town services
- Ensure that St John's Ambulance Service and the Royal Flying Doctor Service (RFDS) have sufficient capacity
- Work with community to ensure communication of issue if this arises

7.1.4 Managing safety and lifestyle issues

- Work with local police, community and workforce to develop strategies to manage increased traffic and workforce behavioural aspects in town.
- Work with the community and responsible agencies (e.g. Departments of Fisheries, Environment and Conservation, Shire of Coorow) in managing the camp recreational activities

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Recommendations

7.2 Assessment of the preferred option for the Operational Phase

As noted in Section 1.1.1, Aviva have made projections regarding workforce residence location in Leeman, Eneabba and Green Head. Of a total workforce of 100 people across the two projects, Aviva expects to be able to recruit 28 employees already resident in the three towns, and attract 72 employees to move to one of the three towns. Of these, it is anticipated that 32 will purchase houses in the towns, with the remainder accommodate in new houses. The implications for the three towns are summarised in Table 7-1.

Table 7-1 Impacts of operational workforce location

Factors	Town		
	Leeman	Eneabba	Greenhead
Number of employees who are existing residents	10	8	10
<i>Percentage of total workforce</i>	<i>6%</i>	<i>7%</i>	<i>13%</i>
Number of employees moving to town	40	2	30
<i>Percentage population increase (assuming multiplier of 3.5 residents/employee)</i>	<i>35%</i>	<i>4%</i>	<i>42%</i>
Number of employees who are new residents buying existing homes	20	2	10
<i>Percentage of available houses</i>	<i>6%</i>	<i>3%</i>	<i>3%</i>
Number of employees who are new residents requiring new lot and house	20	Nil	20
<i>Percentage increase in number of houses in the town</i>	<i>6%</i>	<i>Nil</i>	<i>7%</i>
Total	50	10	40

Assuming a multiplier of 3.5 per additional residents for each employee moving to town (a combination of family members and additional service personnel), the total population increase will be about 250 across the three towns. Both Leeman and Green Head are well supplied with dwellings given their populations, although the pattern of occupancy suggests that many of them are holiday homes, and not be available for sale, or year-in, year-out rental. Further investigation of actual availability of adequate standard housing for purchase or long-term rent will be required closer to the time of the commencement of operations.

In Leeman, the population increase will cause some impact on housing, commercial, health and education services. In the case of the latter, additional young families in the town may increase the primary school enrolment in Leeman, which would reverse a declining trend in school numbers, and be a beneficial development. As with other small towns in the area, the lack of high schooling is likely to limit people's stay in the town as children approach high schooling age.

The projected recruitment of 30 external people to be employed and resident in Green Head could result in an additional 105 people resident in the town, which equates to a 42 per cent increase in the population. This will have some modest impact on local services. Further, people moving to Green Head will need to be aware that

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Recommendations

there is no primary school or high school in Green Head. Primary students go to nearby Leeman and High School students commute to Jurien.

The current projection for Eneabba is that ten (10) employees will be located in Eneabba with eight (8) of these being existing residents. An additional two employees will not have any impact on the town.

Overall, the projected employment arrangements for the operational phase are likely to have only modest impacts on services, and will contribute to critical mass in some social areas in the three towns. The main issue to face employees moving to the towns are the less than ideal education arrangements, and perhaps some issues in locating suitable housing to purchase or rent. Given the better availability of services and schooling in Jurien and Dongara, it may be that some employees may choose that town as a residential location if this is acceptable to the employer.

Section 8

Limitations

URS Australia Pty Ltd (URS) has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of Aviva Corporation and only those third parties who have been authorised in writing by URS to rely on the report. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report. It is prepared in accordance with the scope of work and for the purpose outlined in the Proposal dated 9 October 2007.

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Section 9

Bibliography

Ardross Estates Website – www.ardross.com

Australian Bureau of Statistics (ABS) *2006 Census (Community Profiles and Quick Stats)*. Accessed via www.censusdata.abs.gov.au

Chamber of Minerals and Energy Western Australia (2005). *Fly In Fly Out: A sustainability perspective*. Perth.
Department of Education and Training (DET) *Schools Online* Accessed via www.det.wa.gov.au

Houghton, D. (1993). Long Distance Communitn: a new approach to mining in Australia. *Geographical Journal* ,
159 (2), 287 - 290.

Real Estate Institute of WA (REIWA) Suburb snapshots. Accessed via www.reiwa.com

Shire of Carnamah (2008). *Business Directory for Eneabba*. Accessed via www.carnamah.waa.gov.au

Shire of Coorow (2008). *Business Directories for Leeman and Green Head*. Accessed via
www.coorow.wa.gov.au

Shire of Dandaragan (2007). *Community Service Directory*. Accessed via www.dandaragan.wa.gov.au

Watts, J. (2004). *Best of Both Worlds? Seeking a sustainable regional employment solution to fly in - fly out operations in the Pilbara*. Karratha: Pilbara Regional Shire.