

# **Jemena Northern Gas Pipeline Pty Ltd**

## **Northern Gas Pipeline**

### **Draft Environmental Impact Statement**

#### **CHAPTER 9 SOCIO-ECONOMIC ASPECTS**

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## 9. SOCIO-ECONOMIC ASPECTS

This chapter describes the socio-economic conditions that characterise the regions, communities and people that may be affected by the Project and summarises the potential social and economic impacts of the Project on a regional, state/territory and national scale. Impacts have been analysed and evaluated using the process described in Chapter 5 of this Draft EIS. Opportunities assessment is included in this chapter. For each identified area of risk, this chapter provides justification for the assigned likelihood and consequence ratings, and describes the controls that will be implemented to minimise potential social and economic impacts and maximise the opportunities to local people and communities.

The content of this chapter has been developed specifically to address Sections 4 and 5.8 of the *Terms of Reference (ToR) for the preparation of an Environmental Impact Statement* (EIS ToR) for the Project. Other risks and opportunities identified through Jemena's stakeholder consultation program, the Social Impact Assessment Scoping Study (Appendix R) and the Economic Impact Assessment (Appendix S) are also included. These studies and assessments have been developed by professionals with experience and qualifications relevant to the assessment of social and economic impacts. Details of personnel involved, their experience and qualifications are provided in Appendix D.

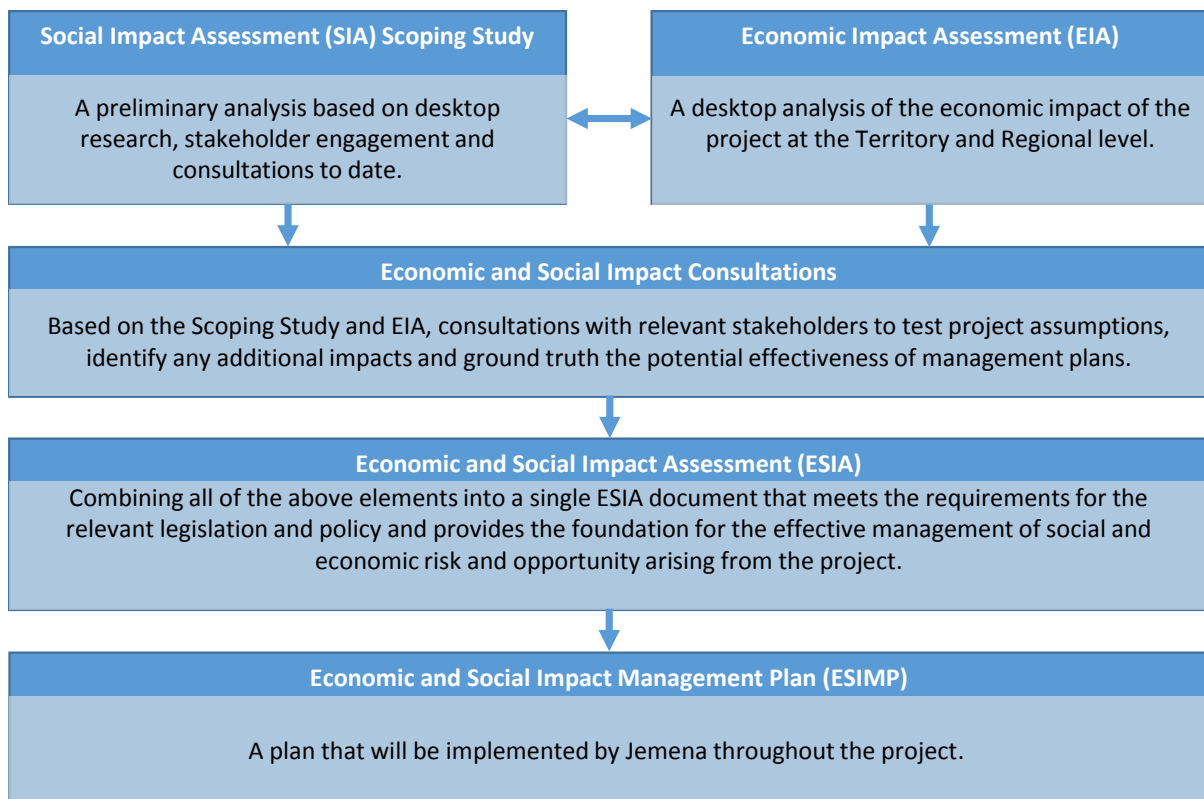
It should be noted that the risk assessment presented in this chapter focuses on socio-economic risk and opportunities relevant to the Northern Territory portion of the Project, specifically the Barkly region. Socio-economic indicators reviewed as part of the Social Impact Assessment (SIA) Scoping Study indicate the risk profile is likely to vary between the Barkly region and the Mount Isa region of north-west Queensland. The risk assessment process identified and assessed risks relevant to both the Barkly region and Mount Isa region, and for completeness, the SIA Scoping Study (Appendix R) includes discussion of the Queensland-specific risks. However, as this EIS is for assessment under Northern Territory legislation only, risks relevant to the Queensland portion of the Project have been omitted from further discussion in this chapter.

The abbreviations, acronyms and terminology used throughout this chapter are defined in the Contents, Acronyms and Glossary section of this Draft EIS.

### 9.1 APPROACH

Section 5.8 of the EIS ToR requests that an Economic and Social Impact Assessment (ESIA) be conducted for the NGP Project. The NTEPA's *Guidelines for the preparation of an Economic and Social Impact Assessment* and the EIS ToR were used to develop the scope for the ESIA. The approach used is illustrated in Figure 9-1.

The information presented in this chapter is drawn from the SIA Scoping Study (Appendix R) and the Economic Impact Assessment (Appendix S). The overall NGP Project ESIA will be finalised once SIA consultations are complete. This work will inform the final Economic and Social Impact Management Plan (ESIMP) which will be lodged with the supplementary EIS. A framework ESIMP is included as an appendix to the SIA Scoping Study.



**Figure 9-1. Economic and social impact management process**

## 9.2 STRUCTURE OF THIS CHAPTER

The context for assessment of socio-economic risks is established in Section 9.2, which sets out the existing social and economic environment under the following headings:

- social and economic – describing the existing social and economic landscape including key stakeholders, main towns and communities, key social and economic demographics and indicators, community structures, human services, industries, social amenity and community vitality
- Aboriginal<sup>1</sup> context – describing the existing Aboriginal and Torres Strait Islander context, including potentially affected communities, people, customs, culture and way of life.

Section 9.3 then describes the potential economic contribution that the Project might make in the Northern Territory and where possible, more specifically the Barkly and Mount Isa regions.

For each potential socio-economic impact identified in the risk register (Appendix F2), Section 9.4 provides a more detailed discussion of risks and proposed control measures to justify the assigned likelihood and consequence ratings.

Section 9.5 combines the approaches to managing impacts (both risks and opportunities) into a description of the primary elements that comprise Jemena's ESIMP.

<sup>1</sup> The term Aboriginal and Indigenous are used interchangeably throughout this document except where otherwise noted and refer to the Aboriginal and Torres Strait Islander people of Australia.

### 9.3 EXISTING SOCIAL AND ECONOMIC ENVIRONMENT

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The Project footprint is entirely located in the Barkly Region of the Northern Territory and the Mount Isa City Council region of north-west Queensland.

The Barkly Regional Council is the second largest Local Government Area (LGA) in Australia, and covers approximately 325,000 km<sup>2</sup> of land in the eastern portion of the Northern Territory. The area is sparsely populated with 8,124 residents (ABS, 2014). The LGA includes Tennant Creek, which is the most populous town in the Barkly region, with a population of approximately 3,634 people in 2014 (ABS, 2014). A number of smaller towns, communities and outstations are also scattered throughout the region. The major industries in the Barkly region are beef production and public administration.

Mount Isa City Council covers an area of 43,310 km<sup>2</sup> and has an approximate population of 21,717 people (ABS, 2014). The City Council area includes the city of Mount Isa and the town of Camooweal and extends from the Northern Territory border to just east of Mount Isa. The major industries in the Mount Isa City Council area are mining and health care along with public administration.

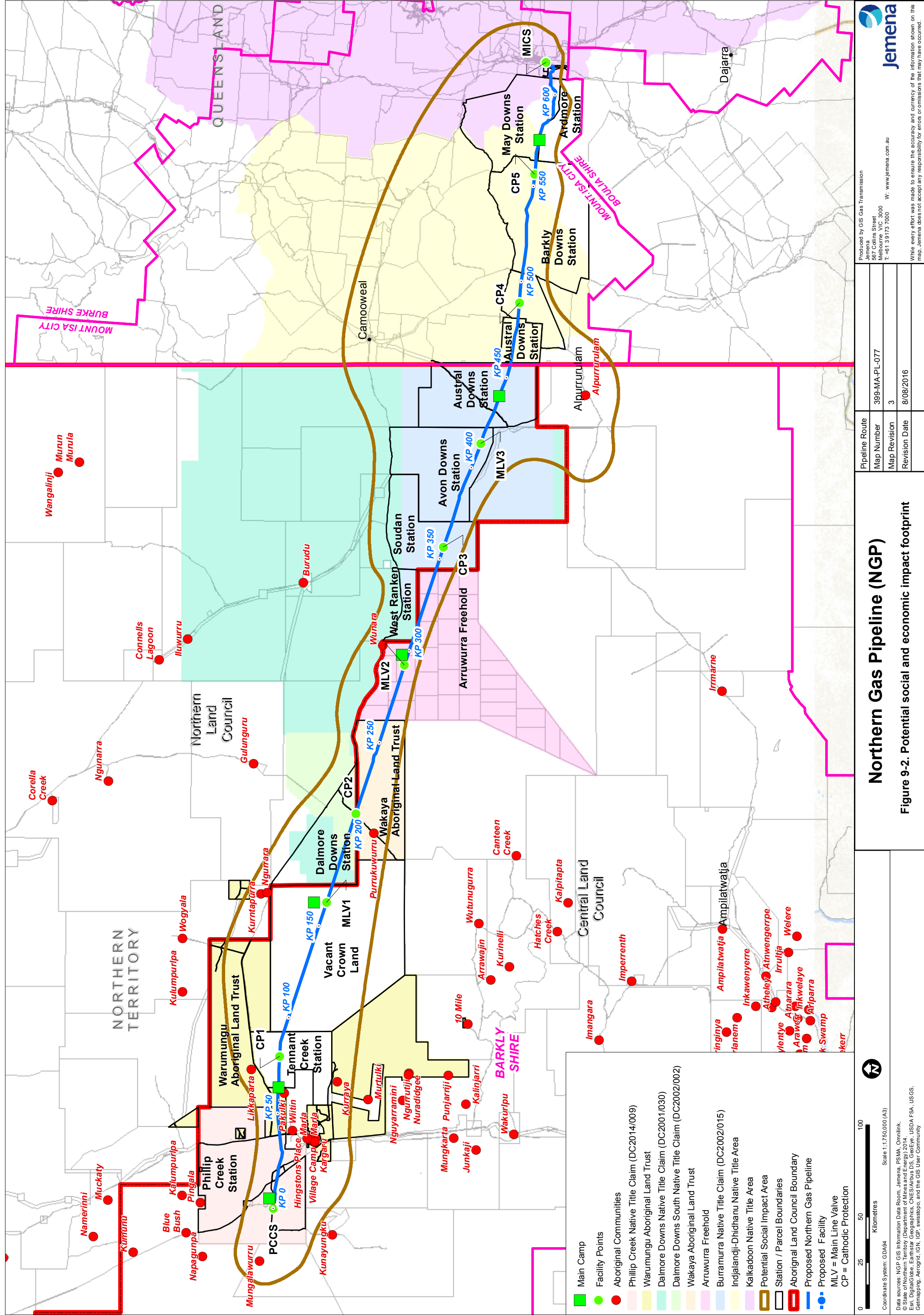
The main towns and communities located near the Project include:

- Tennant Creek
- Alpururulam
- Camooweal
- Mount Isa.

There are also a number of smaller Aboriginal communities, family outstations and pastoral stations and homesteads in the vicinity of the Project.

While the Project will involve social and economic impact in the Northern Territory and north-western Queensland more broadly, this chapter focuses on the immediate regions of the Project. The broader Northern Territory, Queensland and Australian information and impacts are presented as context and relevance where necessary. Figure 9-2 shows a geographical representation of the potential regional social and economic impact footprint of the Project that was used as the basis for assessment of risks.







### 9.3.1 KEY STAKEHOLDERS

The key stakeholders for the Project span the typical sectors of society, i.e. public (government), community (non-government) and private (business and industry).

General engagement processes for Project stakeholders are set out in Chapter 4 of this EIS. From a social and economic impact assessment perspective, the following sections describe the key potentially affected stakeholders who will be consulted with specifically as part of the economic and social impact management process shown in Figure 9-1 above.

While the sectors described below are useful in the identification of and engagement with stakeholders, it is noted there is often significant overlaps between them, typically where different sectoral actors come together in cross sectoral committees for the management of the social and economic development of a particular region or community, often established and supported by government initiatives.

In addition, there are a range of Aboriginal communities and people living in remote areas who will need to be consulted.

#### 9.3.1.1 Public sector stakeholders

These include the relevant Australian, Northern Territory and Queensland government agencies which have responsibilities for and interests in education and training, business and industry development and the development of northern Australia and health and emergency services.

The local government entities, the Barkly Regional Council and the Mount Isa City Council, which provide a wide variety of services in the towns and communities, are also key stakeholders from a social and economic development perspective.

#### 9.3.1.2 Community sector stakeholders

In the community sector, key stakeholders include those Aboriginal organisations which have responsibilities for Aboriginal Land and Native Title or those who hold land directly; they include the Northern Territory Land Councils, the Arruwurra Aboriginal Corporation and the two Native Title Body Corporates in Queensland.

Education and training organisations and institutions, such as the relevant universities, secondary and primary schools and those organisations responsible for the Remote Jobs and Communities Program, are also stakeholders.

There are a variety of other community organisations which are relevant in social and economic impact assessment and they include local arts and language centres, social enterprises, volunteering groups, sporting organisations and groups, and other community organisations including special interest groups.

#### 9.3.1.3 Private sector stakeholders

There are a variety of private sector stakeholder organisations that are important and these include the industry bodies for the oil, gas, pipeline and mining industries, the pastoral industry and the relevant chambers of commerce, including the Indigenous business organisations.

#### 9.3.1.4 Cross sectoral stakeholder organisations

Cross sectoral organisations exist in the regions and communities and relate to regional economic development, community advice and information, community health and safety and community development.

### 9.3.1.5 People living in remote communities

People living in remote communities are also key Project stakeholders. Consultation is planned to be held with Aboriginal people living in Major Aboriginal Communities, Minor Aboriginal Communities, Aboriginal Family Outstations, those people living on pastoral stations and at the various roadhouses and other remote residences.

All of the above stakeholders will be consulted in accordance with the SIA Consultation Plan, Appendix D to the SIA Scoping Study, which contains a full list of those to be consulted.

## 9.4 TOWNS AND COMMUNITIES

This section describes the main towns and communities in the potential social impact footprint.

### 9.4.1 TENNANT CREEK

Tennant Creek is the Northern Territory's fifth largest town with a population of 3,634 (ABS, 2014), and is located on the Stuart Highway, just south of the juncture of the Stuart and Barkly highways.

European arrival in the area began in the 1860s with the passage through of John McDouall Stuart in an attempt to cross Australia from south to north. Stuart named the "Tennant's Creek" after John Tennant, friend and financial benefactor of his exploration voyages. In 1872 a telegraph station was constructed at Tennant Creek as a part of the Overland Telegraph Line.

After that time and through the establishment of the Northern Territory, firstly as a territory of South Australia and then later prior to and after transfer to the Commonwealth post Federation, the land began to be taken up by the pastoral industry with the earliest activities extending from the east across the Barkly Tablelands, overlanding stock (originally sheep) from Queensland.

Gold was discovered in the area in 1895 and early 1900s and from then through the 1920s and early 1930's the gold mining industry became the primary industry upon which the town was founded.

The above information was sourced from the Barkly Regional Council chronological history (Barkly Regional Council, 2016) and further information about the history of Tennant Creek is set out in Chapter 8 of this EIS.

The land in the immediate Tennant Creek area is the traditional land of the Warumungu people. More than half of the people living in Tennant Creek are Aboriginal.

Mining and the pastoral industry remain a core part of contemporary Tennant Creek, with a growing tourism industry based around the natural environment and Aboriginal and European history contributing to diversifying the local economy.

According to the 2011 Census, the Aboriginal population of Tennant Creek is about 52 per cent (ABS, 2011) while the Aboriginal population of the Barkly Region as a whole is about 64 per cent (ABS, 2011).

### 9.4.2 ALPURRURULAM

Established in 1984 and with a population today of about 423, Alpururulam is located about 35km south west of where the pipeline is to cross the Northern Territory and Queensland border. It is the second largest community closest to the project footprint.

Alpurrurulam is the name given to the community today. It is a derivation of the name Ilperrelhelame, given to the nearby freshwater lake on the Georgina River and was called thus by the Alyawarre people. According to Memmott, the original traditional owners of the area were the Bularnu people and the old name for the area is lost and the Bularnu people no longer inhabit the area. The Alyawarre, being pushed off their traditional lands to the south west, sought refuge at Ilperrelhelame and eventually were given the responsibility and right to look after that country. In late 1988, early 1989 and after a long struggle, the Alyawarre were granted title to land upon which they could live near Ilperrelhelame, at Alpurrurulam (Pamela Lyon, 1989).

Alpurrurulam is serviced by the Barkly Regional Council and has a church, school, police station, community shop, aged care centre and clinic.

Alpurrurulam is accessible from the Barkly Highway via the Austral Downs road, the Camooweal – Lake Urandangi Road or the Sandover Highway, however, the community is often cut off for several months during the wet season.

The large majority of the people living in Alpurrurulam are Aboriginal.

### 9.4.3 CAMOOWEAL

Camooweal is a small town on the Barkly Highway 12 km east of the Queensland and Northern Territory border and 191 km from Mount Isa. The 2011 Census recorded a population of 187 people.

Camooweal has a long history of European settlement. The explorer William Landsborough was the first European to pass through the area while searching for the explorers Burke and Wills in 1862. Following his reports of agricultural potential, pastoralists subsequently settled in the area.

The town was gazetted in 1864 and grew as a service centre for the surrounding farming properties, in addition to the establishment of a post office other milestones during that time were the addition of a police station in 1886, opening of a provisional school in 1893, drilling of the town bore in 1897. Electricity was connected to the town in 1952 (Mount Isa City, 2016).

Camooweal is a service centre for the local pastoral stations and provides a base for tourists to visit the surrounding region.

Camooweal is within the Mount Isa Local Government Area.

The Indjalandji people are the original inhabitants of the land surrounding Camooweal. Today, the Aboriginal proportion of Camooweal's population is about 56 per cent (ABS, 2011).

### 9.4.4 MOUNT ISA

Located on the Barkly Highway approximately 120 km west of Cloncurry and 900 kilometres west of Townsville, Mount Isa is the administrative, commercial and industrial centre for Queensland's north-west region, with a population of 21,717 people (ABS 2014).

The Kalkadoon people are the original habitants of the land around Mount Isa.

European history of Mount Isa commenced around 1923 when a prospector, John Campbell Miles, identified rock samples on the banks of the Leichhardt River that were heavily mineralised. Following this discovery and an influx of settlers a Post Office was opened in 1924 and a hospital in 1930.

Mount Isa was proclaimed a city in 1968 and today the mines surrounding the city are significant operations, producing copper, lead, silver and zinc.

The Aboriginal proportion of Mount Isa's population is about 15 per cent (ABS 2011).

## 9.5 ABORIGINAL COMMUNITIES AND PASTORAL STATIONS

### 9.5.1 ABORIGINAL COMMUNITIES

There are some 18 Aboriginal Communities within the Barkly Region that may be either directly or indirectly impacted by the Project. A full list of these is included in the Consultation Plan Appendix to the SIA Scoping Study (Appendix R).

Communities directly associated with the Project, e.g. on Warumungu and Wakaya Aboriginal Land Trust lands (Pukalki and Purrukuwurra) and the Arruwurra Freehold land (Wunara) will be directly affected by Project construction, whereas communities such as Likkaparta, Kurnttapurra and Ngurara may be impacted indirectly, e.g. through increased traffic on the Barkly Highway.

### 9.5.2 PASTORAL STATIONS

There are a number of pastoral stations that are traversed by the NGP, from Phillip Creek and Tennant Creek Stations, close to Tennant Creek, through the Barkly tableland (Dalmore, West Ranken, Soudan, Avon Downs and Austral Stations) and then into Queensland (Austral, Barkly Downs, May Downs and Glencoe stations).

While Jemena is negotiating access and easement agreements with each of the owners of the pastoral leases, the people that live on the stations, e.g. station managers, their families and workers may be subject to social impacts arising from the Project. While these are likely to be short-term in nature due to the short pipeline construction program, social risk and opportunities to these people need to be considered.

### 9.5.3 OTHER REMOTE RESIDENCES

Other remote residences not included in the above include for example, the Barkly Homestead Roadhouse, residents at the Avon Downs Police Station and other remote residences close to the Project footprint.

## 9.6 SOCIAL AND ECONOMIC PROFILE

The following subsections provide an overview of the social and economic profile of the regions, Barkly and Mount Isa, using the LGA statistical areas. Secondary data is based on the 2011 Census data published by the ABS in 2013 and later ABS data and then primary data has been obtained from a variety of sources. Henceforth throughout this chapter the Barkly Region is referred to as the Barkly and the Mount Isa City Council region is referred to as Mount Isa.

### 9.6.1 SOCIO-ECONOMIC INDICATORS

Some key summary indicators that describe the social and economic environment follow. The indicators show a clear difference between the main affected regions of the Barkly Region (including Tennant Creek and Alpurrurulam) on the one hand versus the Mount Isa City Council area (including Camooweal) on the other.

On all indicators, the Barkly Region generally, faces significantly greater social and economic challenges than does Mount Isa, given their respective development histories. These differences translate directly into

the assessment and management of the potential social and economic impacts of the Project. For example, there is a significant risk to the Barkly Region that the bulk of the employment opportunities could be taken up by local people from Mount Isa (and from the Northern Territory and western Queensland more broadly).

The indicators also paint a picture of an Aboriginal population in the regions and particularly in Tennant Creek (and also Alpururulam) that is disadvantaged and potentially more sensitive to the type of social changes that might occur as a result of the Project.

#### 9.6.1.1 Population

The total population of the Barkly is about 8,100 of whom about 64 per cent are Aboriginal. Mount Isa on the other hand has a total population of about 23,000 of whom about 15 per cent are Aboriginal.

Population growth in the Barkly was lowest at 11 per cent over the 10 year period (2005 – 2014), whereas Queensland and the Northern Territory saw population growth of 23 per cent and 21 per cent respectively, and Mount Isa increased 14 per cent.

#### 9.6.1.2 Age

The median age across both the Barkly and Mount Isa is ~30, which is significantly lower than the national median age of approximately 37. This indicates that there a greater number of young people than older people within the population. In the population centres within the potential Project impact footprint, Alpururulam has the lowest median age of 25 and Tennant Creek the highest at 32.

#### 9.6.1.3 Life expectancy, mortality and fertility rates

Life expectancy and mortality ratios, including infant mortality and fertility rates, can paint a picture of the general health and wellbeing of a community:

- the average life expectancy in the Barkly (when included as part of Statistical Area 4 - Northern Territory Outback which excludes Darwin) is approximately 72 for men and approximately 76 for women (ABS, 2013). This contrasts with a life expectancy of approximately 75 for men and approximately 80 for women in the Northern Territory as a whole
- in Mount Isa (when included as part of Statistical Area 4 – Queensland Outback), the average life expectancy for men is approximately 73 and women approximately 76 (ABS, 2013), contrasted against approximately 80 for men and 84 for women in Queensland
- the mortality ratio, i.e. the number of deaths per 1000 people over a given period, for the Barkly Region is approx. 13.3, against the Northern Territory ratio of 7.6. In Mount Isa the mortality ratio is 10 per 1000, against a whole of Queensland ratio of 4.6. These figures can be contrasted against the national standardised death rate of 5.7
- the Overcoming Indigenous Disadvantage Report (Australian Government Productivity Commission, 2014) states that for Aboriginal and Torres Strait Islander children in 2012, Australia wide, the infant mortality ratio<sup>2</sup> is 6.2, against 3.7 for non-Indigenous children dying before their first birthday. It can be expected that for Aboriginal people in the Barkly and Mount Isa the infant mortality ratio is at least consistent with the national Indigenous infant mortality rate

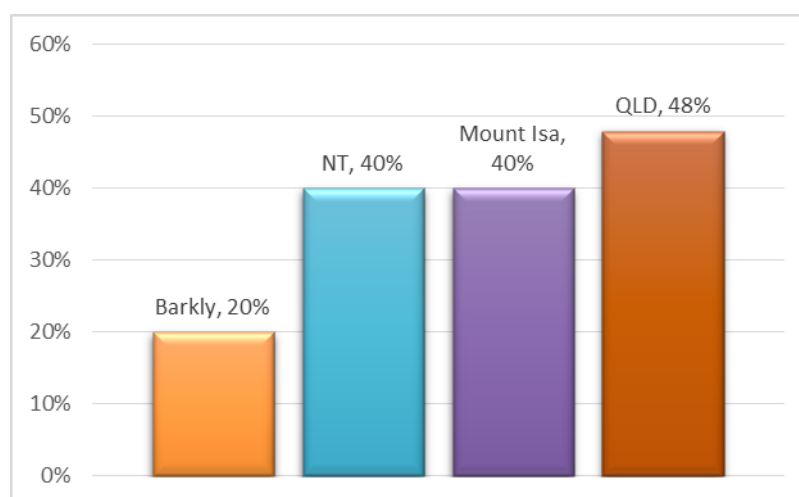
<sup>2</sup> Infant mortality ratio is the number of deaths within 1 year of birth, per 1000 live births over a given period.

- nationally, there is a significant difference between Aboriginal and Torres Strait Islander and non-Indigenous infant mortality. In the Northern Territory, the Aboriginal and Torres Strait Islander infant mortality rate was over three times as high as the non-Indigenous rate (13.6 deaths compared with 3.8 deaths per 1,000 live births)
- the fertility rate (births per woman) in the Barkly is 2.5, against a Northern Territory rate of 2.15 and in Mount Isa the fertility rate is 2.73 as against Queensland at approximately 2.0.

#### 9.6.1.4 Education and training

Education and training indicators provide useful information about the ability of a population to support a construction workforce.

- in the Barkly the proportion of people aged 15 and over who have a post-secondary school Certificate is 11 per cent, against ~19 per cent in the Northern Territory as a whole. For Mount Isa, the proportion is about 23 per cent, as against ~20 per cent for Queensland as a whole
- in the Barkly the proportion of people aged 15 and over whose highest year of schooling completed was Year 12 (or equivalent), is approximately 20 per cent, against nearly 40 per cent for the Northern Territory as a whole. Mount Isa is the same as the Northern Territory at about 40 per cent, against Queensland with 48 per cent as a whole as shown in Figure 9-3



**Figure 9-3. Comparison of people aged 15 and over whose highest year of schooling completed was Y12 (or equivalent)**

- by contrast, the proportion of people aged 15 and over in Barkly whose highest year of schooling completed was Year 8 (and who are no longer attending school) is about 20 per cent, compared with about eight per cent for the Northern Territory as a whole. Equivalent figures for Mount Isa and Queensland are five per cent and six per cent respectively
- the proportion of people in the Barkly aged 15 and over who hold post-secondary school qualifications is about 44 per cent against 56 per cent for the Northern Territory as a whole. In Mount Isa about 57 per cent of the population aged 15 and over who hold post-secondary school qualifications, against a Queensland total of about 54 per cent.

These figures suggest a significantly higher capacity for Mount Isa to support a construction and operations workforce for the NGP than the Barkly.

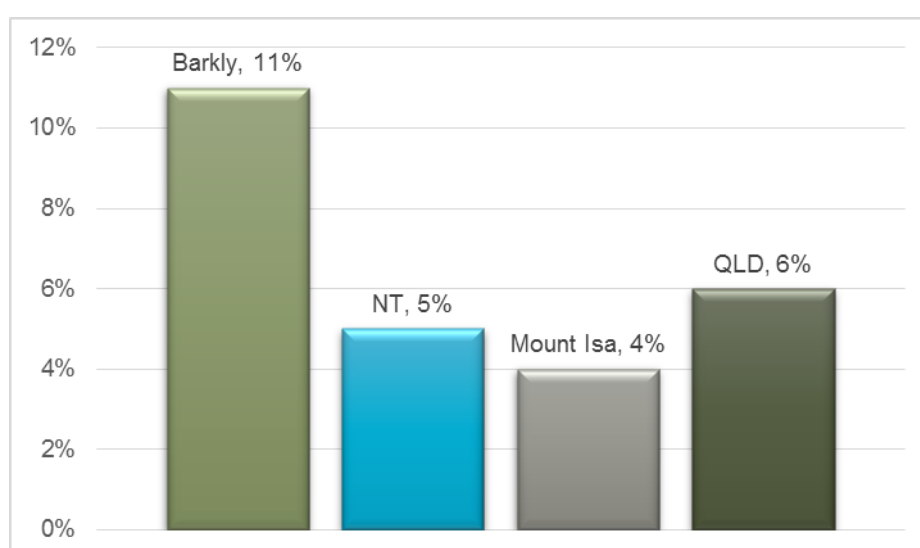
Further analysis of the statistics of the Barkly looking at the contrast between Aboriginal and non-Aboriginal people reveal:

- of the 149 people in the Barkly who have year 12 or equivalent as their highest level of schooling, 42 (28 per cent) are Aboriginal
- 69 Aboriginal people compared to 229 non-Aboriginal people have a certificate level III and IV. Seven Aboriginal people compared to 67 non-Aboriginal people have a diploma or advanced diploma qualification and 11 Aboriginal people compared to 92 non-Aboriginal people have a bachelor's degree
- no Aboriginal people in the Barkly region have reportedly attained a post graduate level university qualification

#### 9.6.1.5 Employment, labour force participation and income

Employment and labour force participation indicators described below also provide useful information about the ability of a population to support a construction workforce:

- The labour force participation rate, i.e. the proportion of the population aged 15 years and over who are employed or who are actively looking for work, in the Barkly is about 45 per cent, as against about 64 per cent for the Northern Territory as a whole. In Mount Isa the rate is 67 per cent as against 63 per cent for Queensland.
- The unemployment rate in the Barkly is about 11 per cent against a Northern Territory unemployment rate of five per cent. Mount Isa on the other hand has an unemployment rate of four per cent against six per cent for Queensland as illustrated in Figure 9-4.
- The unemployment rate in the Barkly region is nearly double the unemployment rate in the Northern Territory, approximately 2.4 times the unemployment rate in Mount Isa and 70% higher than the Queensland and Australian unemployment rates.
- The unemployment rate for Aboriginal people in the Barkly is about 23% compared to the unemployment rate for non-Aboriginal people of about 2%



**Figure 9-4. Comparison of unemployment rate**



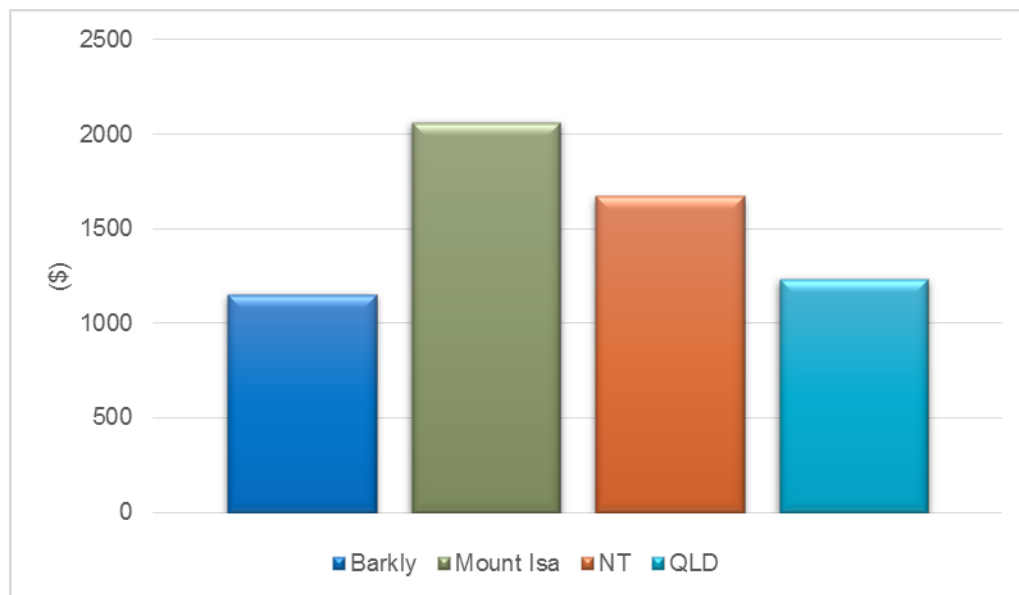
Aboriginal unemployment rates should be considered with caution as in the ABS Census data they also include those people engaged in the Remote Jobs and Communities Programme (RJCP), previously known as Community Development Employment Programs (CDEP) and 'work for the dole' programs.

Analysis of primary data, obtained through contact with service providers, indicates a much higher unemployment rate. For example, consultation with local employment service providers reveal that there are some 1,200 people seeking work in the region of which a vast majority are Aboriginal (over 95%), unskilled and not work ready. Service providers estimate that approximately 50 job seekers could be work ready in the Barkly region.

These figures suggest a very low work ready available workforce from the Barkly region, with people mainly possessing only entry level skills. During consultations, service providers did note that skilled workers currently in employment may seek to join the Project if the remuneration on offer is higher than their current employment.

In terms of income, the median total weekly household income in the Barkly is \$1,152, against that of \$2064 in Mount Isa. In the Northern Territory the median household income is \$1674 and in Queensland, \$1235 as illustrated in Figure 9-5 below.

High income levels in Mount Isa reflect the predominance of resources industry employment (mainly mining and processing) (over 30% of jobs), as distinct from the Barkly where the bulk of employment is in the human services sectors of public administration and safety, education and training, health care and social assistance (over 50% of jobs).



**Figure 9-5. Median total weekly household income comparison**

### 9.6.1.6 Crime

Crime rates can be indicative of social amenity and community cohesion in a community and can point to a range of underlying issues. Typically crime statistics are reported in two forms, crimes against the person and crimes against property and are typically measured by the rate of offending per 100,000 of the population. Further detail is set out in the SIA Scoping Study; however, Table 9-1 provides a comparison of offence rates between Tennant Creek, Alice Springs, Katherine and the entire Northern Territory.

**Table 9-1. Rates of offending per 100,000 people for the 12 months 1 May 2015 to 30 April 2016**

Crime	Tennant Creek	Katherine	Alice Springs	Northern Territory
Crime against the person	7,859	4,411	7,048	3,281
Crime against property	13,905	7,459	14,461	7,742

In general, the rates of offending in Tennant Creek are close to double the Territory as a whole.

Compared to Tennant Creek, Mount Isa has a significantly lower crime rate with crimes against the person being 3,162 and crimes against property being 6,903 per 100,000 of population. These rates for Mount Isa are approximately 1.6 times higher for property crime and 5 times higher for crime against the person when compared to Queensland as a whole (Queensland Police Service 2016).

### 9.6.1.7 Economic burden

The economic burdens that a community carries are a summary indicator of the economic health of a community. Two indicators are:

- the Child Burden Ratio – measures the ratio of children between the ages of 0 and 14, to the number of employed adults and so provides an insight into the number of dependent children there are for each economically active adult. A higher ratio indicates a higher burden is placed on employed people in the population
- Economic Burden Ratio – measures the ratio of employed to unemployed people. A higher figure indicates there is a greater number of employed people to support each unemployed person.

For the subject regions:

- in the Barkly there are 1.32 children per employed person as against 0.75 in the Northern Territory. In Mount Isa there is 0.48 children per employed person, as against 0.43 for Queensland as a whole
- the child burden ratio in the Barkly for Aboriginal people is 4.85
- in the Barkly there are almost 6 employed people for every unemployed person, while in the Northern Territory as a whole there are nearly 20 employed people for each unemployed person, 23 in Mount Isa and 15 in Queensland

These figures indicate that in the Barkly the economic burden falls more heavily on the fewer employed people, more likely intensely in the Aboriginal community given the proportion of the population that is Aboriginal, as against a far lesser burden in Mount Isa, also against the Northern Territory and Queensland.

## 9.6.2 HOUSING AND ACCOMMODATION

Undertaking an assessment of existing housing and accommodation is important in understanding how the NGP Project workforce might be able to be accommodated during both the construction and operations phases. Details of the Project personnel and accommodation requirements are provided in Chapter 2 of this EIS.

Outside of temporary construction camps, there are generally two forms of existing housing and accommodation that can be considered:

- Private housing stock: individually owned houses, apartments, flats etc.
- short-term commercial accommodation: hotel and motel accommodation.

Private stock would generally be the best option for the operations phase of a project such as the NGP and existing commercial accommodation for the construction phase, although there can often be several forms of overlap, e.g. construction workers seeking privately rented accommodation as a more economic means and to avoid the institutionalised strictures of a company run workers camp.

From a construction perspective then, understanding the range of short term, commercial accommodation available in Tennant Creek and Mount Isa, including the various classes of accommodation and the annual supply / demand curve, will be important in determining the potential economic impact on the local economies.

From an operations perspective, the types and numbers of housing stock, median house price and rents, vacancy rates and other local real estate market factors of privately owned houses in a community are also important in understanding the impact an operations workforce being established in a town might have on the local economy.

### 9.6.2.1 Tennant Creek

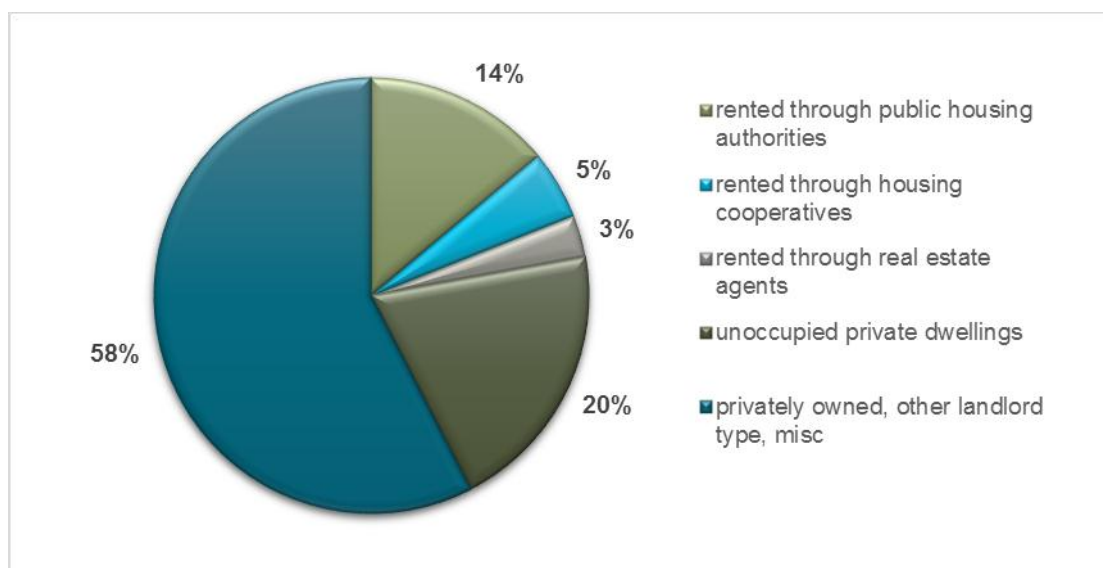
In Tennant Creek the existing housing stock comprises houses and semi-detached dwellings, flats and apartments.

In Tennant Creek there were 1,061 private dwellings as of the 2011 census. Of these, 148 were being rented through public housing authorities, and 54 rented through housing cooperatives. This is likely reflective of the high Aboriginal population and the majority of the employment in the region associated with Public Administration, particularly in Tennant Creek which is the focal point for government services for the regions.

215 were classified as unoccupied private dwellings (unknown type), leaving a stock of 644.

Of this 644, only 33 were rented through real estate agents indicating a very small pool of accessible private rentals.

This information is presented in Figure 9-6 below.



**Figure 9-6. Tennant Creek housing stock by ownership type**

Excluding housing rented through public housing or cooperatives, the stock of the 644 dwellings comprises:

- 482 houses
- 36 semi-detached/townhouse style
- 78 flats, units, apartments
- 48 other dwellings.

Other dwellings include caravans, cabins, improvised homes, or house/flat attached to a shop.

Housing in Tennant Creek is relatively affordable in terms of mortgage repayments and rental costs. The average house sale price between April 2015 and March 2016 was \$222,725 (REINT, 2015 and 2016). Over a longer-term timeframe between mid-2011 to the end of 2015 the median house sale price of houses in Tennant Creek remained within a band of between \$200,000 and \$300,000. In the March quarter of 2016 a house was sold for \$365,000, however given this was a single sale it is not necessarily representative of a broader trend (REINT, 2016).

Discussions held with local real estate agents indicate a very tight residential rental market while there is ample supply of residential houses for sale.

In Tennant Creek the existing short term, commercial accommodation comprises approximately:

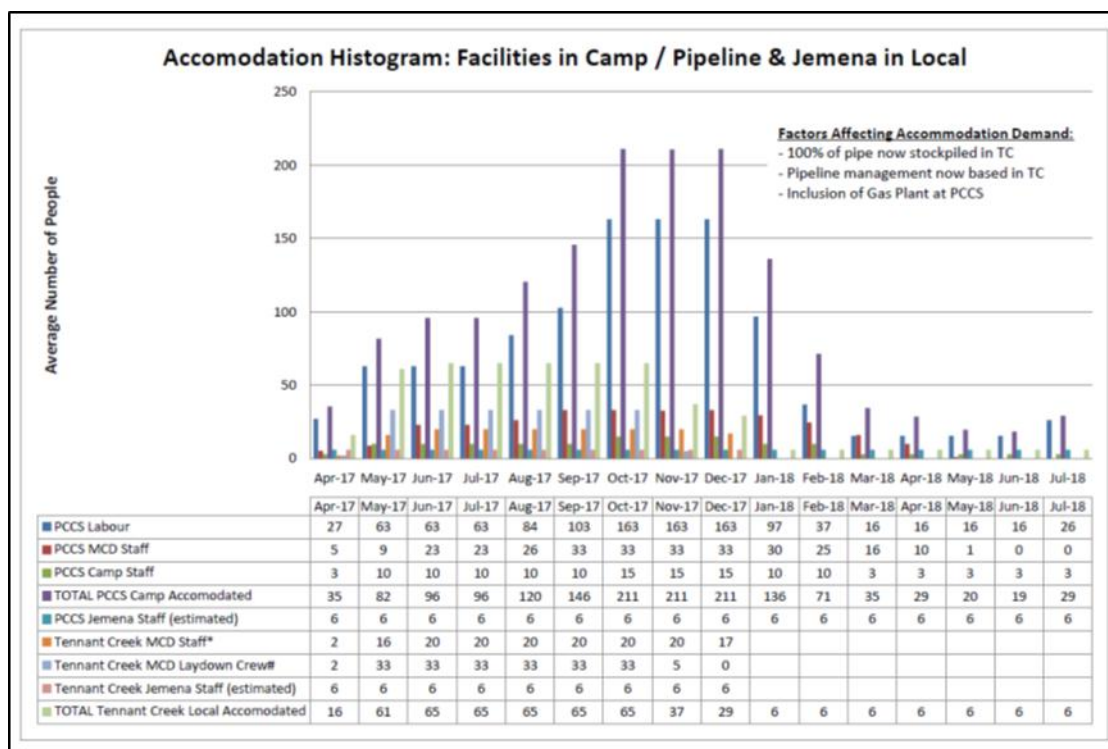
- hotel/motel beds: 182
- caravan park cabins: 69
- hostel type rooms: 9

The caravan park and hostel type rooms are considered unsuitable without full messing facilities and so the total of 182 rooms reflects the current capacity of Tennant Creek to cater for the construction workforce, noting that these rooms will be of varying standards and further analysis is required to assess suitability.

### Project construction phase demand/supply

The Project accommodation requirements that might impact on housing and accommodation availability in Tennant Creek will be related to those associated with the compressor station construction activities at Phillip Creek. The pipeline construction crews will be housed in temporary workers accommodation camps along the pipeline construction ROW and so will have little direct impact on the town.

The current project accommodation demand curve for the Phillip Creek Compressor Station (PCCS) construction crew has work commencing in Tennant Creek around April 2017 and working through to July 2018. Figure 9-7 below shows the expected demand and where they will be accommodated.



**Figure 9-7. Expected accommodation demand profile for Tennant Creek**

It is clear from the above that if all of the above accommodation demand were to be sourced in Tennant Creek that would effectively saturate the existing short term, commercial accommodation stock and have a significant impact on the town, other industries, e.g. tourism and hospitality and also the provision of government services to the town.

Consequently, a construction camp is to be established at the PCCS to house the majority of the workforce while it is expected that for the period May – December 2017 there will be a constant demand for between 30 and 65 rooms per night in commercial accommodation in Tennant Creek.

### Project operational phase demand/supply

From an operational perspective it is expected that there will be six people domiciled in Tennant Creek for the operations phase of the Project, with additional contract support as required to support key maintenance activities.

Assuming that operations staff rent or purchase of existing homes, either houses, semi-detached dwellings and / or flats or apartments, it is clear that the operations phase accommodation impact would be able to be readily absorbed into the town.

### 9.6.2.2 Mount Isa

In Mount Isa the existing housing stock comprises a broad range of houses, semi-detached dwellings, and flats and apartments. Relative to the whole of Queensland current house sales prices are lower in Mount Isa, renting a unit is cheaper, while renting a house is slightly more expensive.

In Mount Isa there were 6,960 private dwellings recorded during the 2011 census.

Of these 553 were public housing rentals, 29 rented through housing cooperatives and 674 were classified as unoccupied private dwellings, leaving a private stock of 5,704.

Of this total, 931 were rented through real estate agents indicating a ready supply of private rentals.

The annual median sale price in Mount Isa was \$325,000 (Queensland, 2016) and over the ten-year period to December 2015 the median house price in the Mount Isa Local Government Area has risen from slightly above \$150,000 to approximately \$320,000 (Queensland Government Statistician's Office, 2016).

From conversations with local real estate agents in Mount Isa information provided indicated the rental market is adequately supplied and sales of residential houses and units is slowing with prices softening.

In Mount Isa the existing short-term commercial accommodation comprises:

- hotel/motel rooms – 561
- budget – 189
- caravan parks/cabins – 5 operations in total, unknown number of cabins (Mount Isa City Council, 2016)

The budget category listed above includes one accommodation provider that provides rooms and messing that is used by resources sector workforces. Similarly, the caravan parks / cabins noted above includes providers that maintain workforce type accommodation and services.

This is reflective of the resource industry nature of the town.

#### Project construction phase demand/supply

The construction accommodation demand for Mount Isa is significantly less than Tennant Creek (almost half) due to the differing designs of the two compressor stations, i.e. Mount Isa compressor station will not have the same nitrogen removal facilities as Tennant Creek and so the Mount Isa demand will be less. At peak the construction crew demand at Mount Isa will be approximately 100.

The existing commercial accommodation in Mount Isa will be more than sufficient to absorb the demand.

#### Project operational phase demand/supply

From an operations perspective it is expected that there will be approximately four people domiciled in Mount Isa for the operations phase of the Project.

Assuming that operations staff require rental / purchase of existing homes – either houses, semi-detached dwellings or flats / apartments – it is clear that the operations phase accommodation impact would be able to be readily absorbed into Mount Isa.

### 9.6.3 HEALTH AND EMERGENCY SERVICES

Within the Barkly region the centre for health and emergency services is at Tennant Creek. There are also basic services at Alpururulam and Avon Downs. The Mount Isa region is serviced by the full range of health and emergency services that are expected to exist in large regional centre.

#### 9.6.3.1 Barkly region

The current services available at Tennant Creek include:

- Tennant Creek Hospital: a 20-bed hospital providing accident and emergency and outpatient facilities, with other visiting medical services (NT Department of Health 2016)
- Anyinginyi Health Aboriginal Corporation provides primary health care services to Aboriginal people in Tennant Creek and the surrounding region (Australian Indigenous Health Information Net 2016)
- aeromedical services provide medical evacuation services including inter-hospital transfers, evacuations, and retrievals (NT PFES 2016)
- St John Ambulance has a centre co-located with the Tennant Creek hospital and provides a single ambulance crew available 24/7 within a 150km radius of Tennant Creek (St John Ambulance 2016)
- From a medical evacuation perspective Avon Downs and Alpururulam are serviced by the RFDS and the Mount Isa Community Rescue Helicopter
- Alpururulam has a Community Health Clinic staffed by two nurses (NT Police, Fire and Emergency Services 2016)
- Tennant Creek Police Station provides the police services in the immediate Tennant Creek area and there are police stations at Avon Downs and Alpururulam
- The Tennant Creek Fire Station is staffed by career, auxiliary and volunteer fire fighters, and operates under the Northern Territory Fire & Rescue Service Southern Command. It has one fully equipped fire and emergency response truck, two light vehicles for fire-fighting and access to aerial support as required. It services Tennant Creek and the Barkly region of the Northern Territory and works closely with Bushfires NT and pastoral stations (NT Police, Fire and Emergency Services 2016)
- Tennant Creek also has 10 trained members in its Emergency Service Volunteer Unit (NT Police, Fire and Emergency Services 2016).

Jemena has and will continue to consult with the Northern Territory Department of Health and the Northern Territory Police, Fire and Emergency Services (NTPFES) regarding the development of its Emergency Response Plans.

#### 9.6.3.2 Mount Isa

The services available at Mount Isa include:

- Mount Isa Base Hospital (hospital category C), 80 beds, 24 hour emergency services, broad range of medical services including surgery, intensive care, paediatric, allied health, mental health and visiting specialists (Queensland Department of Health 2012).
- a number of GP services



- North Queensland Helicopter Rescue Service operates from a base at the Mount Isa airport
- there is a permanently manned and operational urban fire service in Mount Isa with two firefighting trucks that can operate concurrently. A rural fire service volunteer brigade is also present in Mount Isa with a dedicated fire truck and large number of volunteers (Pers.comm, 2016)
- Mount Isa Royal Flying Doctor Base, services provided include remote medical consultation, aeromedical retrievals and primary health care clinics incorporating general practice, child and family health, Aboriginal health, mental health and health promotion (Royal Flying Doctor Service, 2016)

Nearby Camooweal has the following services:

- Camooweal Primary Health Care Clinic. Nurse led facilities and 24/7 emergency support with hospital based ambulance coverage, telehealth services, visiting medical, community and allied health professionals (Queensland Department of Health 2012)
- a rural fire service which has a dedicated fire truck and has around 12 volunteers with approximately three or four that could be available at any one time. There is also firefighting capability called primary producer brigades on some of the pastoral stations surrounding Camooweal and Mount Isa (Pers.comm 2016)

The above indicates a broad range of health and emergency services and facilities supporting Mount Isa city and the surrounding areas.

#### 9.6.4 OTHER HUMAN SERVICES

Other human services can include services provided by government (either at the Commonwealth, state, or local level) or private sector for such things as:

- support for housing
- support for job seekers
- child support services
- provision of sports and recreation services and infrastructure
- community outreach.

The provision of these services and importantly the ability of the community to access them can contribute to the overall liveability or amenity of a community. They can also support a community in times of stress or change.

For Tennant Creek this includes organisations such as the Australian Red Cross, volunteer service organisations such as the Lions Club, the Buffaloes Club, Rotary, the Country Women's Association and the Returned Services League (RSL) and a range of various sports and recreation clubs – e.g. football, golf, lawn bowls. In addition, the broader range of services provided by Government, through community organisations including, employment support services, children and family services support, domestic violence, drug and alcohol counselling services and so on can be included in the scope of “other human services”.

While Tennant Creek does have access to all of these services the social and economic indicators referred to above conveys the picture of a community that is potentially very sensitive to social change.

The remote towns along the pipeline route – Alpururulam and Camooweal and the various Indigenous communities and pastoral stations do not have immediate and direct access to many of these kinds of services and so would rely on larger service centres such as Tennant Creek and Mount Isa.

## 9.7 COMMUNITY COHESION AND COMMUNITY RESILIENCE

The term ‘community’ has a wide range of meanings, and warrants clarity in understanding the boundaries of community resilience and cohesion within this Scoping Study. It can range from a broad group with which one shares a common interest or sense of identity to a small group where everyone is known to each other (Australian Bureau of Statistics, 2004). For the purpose of this Scoping Study and the NGP project, the focus will be community groups who share common location as well as shared interest and shared identity (such as culture). Community will be referred to as a place designated by geographical or administrative boundaries that functions under the jurisdiction of a governance structure, such as a town, city, or state. It will also describe people who have affiliations which have grown as a result of shared interest and have a shared identity based on culture, location, history, population, employment, et cetera. Successful communities provide their members with the means to meet essential needs and to pursue their interests and aspirations.

The stakeholder consultations will assess the social institutions and structures such as community service, cultural, government, education, economic, as well as built environment, focusing on their role and importance in community cohesion and resilience. The assessment of community cohesion and community resilience takes into account the economic and social goals and aspirations of the communities.

There is no universally accepted definition or concept of social cohesion, however there has been a certain amount of convergence in the definitions. Berger-Schmitt and Noll (2000) summarise a number of different ways of mapping social cohesion and conclude:

“The concept of social cohesion incorporates mainly two dimensions of societal development which may be related to each other but can be analytically distinguished. The first dimension concerns the reduction of disparities, inequalities, breaks and cleavages ... The second dimension embraces all aspects which aim at strengthening social connections, ties and commitments to a community.”

Stated simply, community cohesion is a state of harmony and shared sense of belonging and shared vision between people living in a defined community based on the strength of networks and relationships. Jemena wants to ensure that the Project does not negatively impact on community cohesion. This will depend to some extent on the community’s resilience and by managing activities that could undermine both cohesion and resilience.

The framework for social cohesion uses the social cohesion model developed by the Scanlon Foundation and Monash University for the Mapping Social Cohesion longitudinal study. The social cohesion model includes five domains:

- **Sense of Belonging:** Shared values, identification with Australia, trust.
- **Social justice and equity:** equality of opportunity and trust in institutions.
- **Participation:** Voluntary work, political and co-operative involvement.
- **Acceptance and rejection, legitimacy:** Experience of discrimination, attitudes towards minorities and newcomers.
- **Sense of worth:** Life satisfaction and happiness, future expectations (Markus, 2015).

The above domains have been incorporated in the Scanlon-Monash Index (SMI) of Social Cohesion, which will be used as indicators when measuring community social cohesion in the stakeholder engagements and help draw further conclusions about the levels of cohesion.

Analysis of community resilience for this assessment spans activities ranging from risk mitigation, opportunity maximisation and post-project recovery. The term resilience also has many definitions stemming from the fields of psychology and ecology. For purposes of the Project, resilience is defined as the ability to persist (i.e., to absorb shocks and stresses and still maintain the functioning of society and the integrity of ecological systems) and the ability to adapt to change in the face of unforeseen circumstances and risks (Adgar, 2003). Given that the impacts deriving from the Project will be both negative and positive in nature, the definition of resilience must reflect not only the community's ability to resist and withstand negative impacts, but it must reflect the community's ability to adapt to positive change and emerge in a better state as a result. Therefore, in the context of the Project, Circle defines community resilience as:

*The community's level of adaptability to unforeseen and foreseen change, both positive and negative; and as a result not only have the ability to bounce back rapidly, but evolve and grow in the face of change in a way that meets the aspirations of the community.*

Failing to prepare communities, will make them more likely to be overwhelmed by immediate and residual impacts of the Project, and less likely to adapt and capitalise on opportunities. Given the short length of the project, the ESIA and ESIMP will aim to align priorities and resources with community goals to boost and/or enhance the community cohesion and resilience towards realising their aspirations and leaving a long lasting legacy.

The data gathered in the stakeholder consultations with regards to the economic and social risks and opportunities identified for the Project will be analysed against selected indicators in order to draw substantive conclusions regarding the level of community cohesion and resilience in responding to the impacts. Within the Barkly and Mount Isa regions, the consultations will focus on material risks and opportunities identified in the risk and opportunity registers in Appendix B and C of the Scoping Study. Analysis will focus on risks that remain moderate and above after mitigation measures have been put in place, as well opportunities that remain moderate and above after enhancement measures have been put in place.

This includes impacts pertaining to things such as, but limited to: crime, conflict, alcohol and drug related conflict, diverse cultures of the various Aboriginal communities and language groups, the influx of workers, influx of single workers with no ties to the community, higher disposable incomes, employment opportunities, displacement of other economic sectors, economic growth leading to increased business activity, economic and employment benefits not being realised, road safety, demand on government and local services, reduced capacity to provide local government services, pressure on rental accommodation and pressure on police and emergency services.

Through the stakeholder consultations further information will be gathered that allows for an assessment of the social cohesion in Tennant Creek, Alpururulam, Mount Isa and Camooweal, based on the SMI Social Cohesion model.

## 9.8 ABORIGINAL CONTEXT

Aboriginal people comprise a comparatively significant portion of the population in both the Barkly and Mount Isa regions representing approximately 64% of the population in the Barkly Region (compared to 30% in the NT) and approximately 15% in Mount Isa (compared to approximately 3.5% in Queensland). The Indigenous population of Australia is approximately 3% (ABS 2011).

### 9.8.1 ABORIGINAL LAND INTERESTS

The land across the whole project footprint is the traditional lands of one group of Aboriginal people or another, whether held under the Aboriginal Land Rights (Northern Territory) Act 1976 (*Cth*) or where Native Title exists, is claimed or has been determined under the Native Title Act 1993 (*Cth*).

For this Scoping Study, the term ‘Aboriginal group’ is used in a general sense, noting that no distinction has been made between language groups on the one hand, and land owning (estate) groups on the other.

The Project will intersect the land interests of several Aboriginal groups including, in order from Warrego (the site of the Phillip Creek Compressor Station) and Tennant Creek through to Mount Isa: the Walmanpa, the Warumungu, the Wakaya, the Arruwurra, the people associated with the Dalmore Downs, Dalmore Downs South and Burrumurra native title claims, the Indjalandji-Dhidhanu and the Kalkadoon people.

Figure 9-8 shows the Aboriginal land interests across the Project footprint.

Jemena is in the process of negotiating land agreements with each of the Aboriginal Parties, through their respective representative organisations for easements across the land for the NGP Project. These agreements will take the form of section 19 agreements under the Aboriginal Land Rights Act (NT) (ALRA), Indigenous Land Use Agreements (ILUA) (PBC and Area) under the *Native Title Act* and Option Agreements under the Lands Administration Act (*NT*). All of these agreements will contain consideration for impacts in the form of benefits.

The relevant Land Councils, Native Title Representative Bodies, Aboriginal Corporations and Native Title Prescribed Bodies Corporate that Jemena has been engaged with in relation to the above are the Central Land Council, the Northern Land Council, the Arruwurra Aboriginal Corporation, the Indjalandji-Dhidhanu Aboriginal Corporation, the Kalkadoon Native Title Aboriginal Corporation and the Queensland South Native Title Services.

Jemena is in the process of negotiating land agreements with each of the Aboriginal Parties, through their respective representative organisations for easements across the land for the NGP Project. These agreements will take the form of section 19 agreements under the ALRA, Indigenous Land Use Agreements (PBC and Area) under the NTA and Option Agreements under the Lands Administration Act (*NT*). All of these agreements will contain consideration for impacts in the form of benefits.

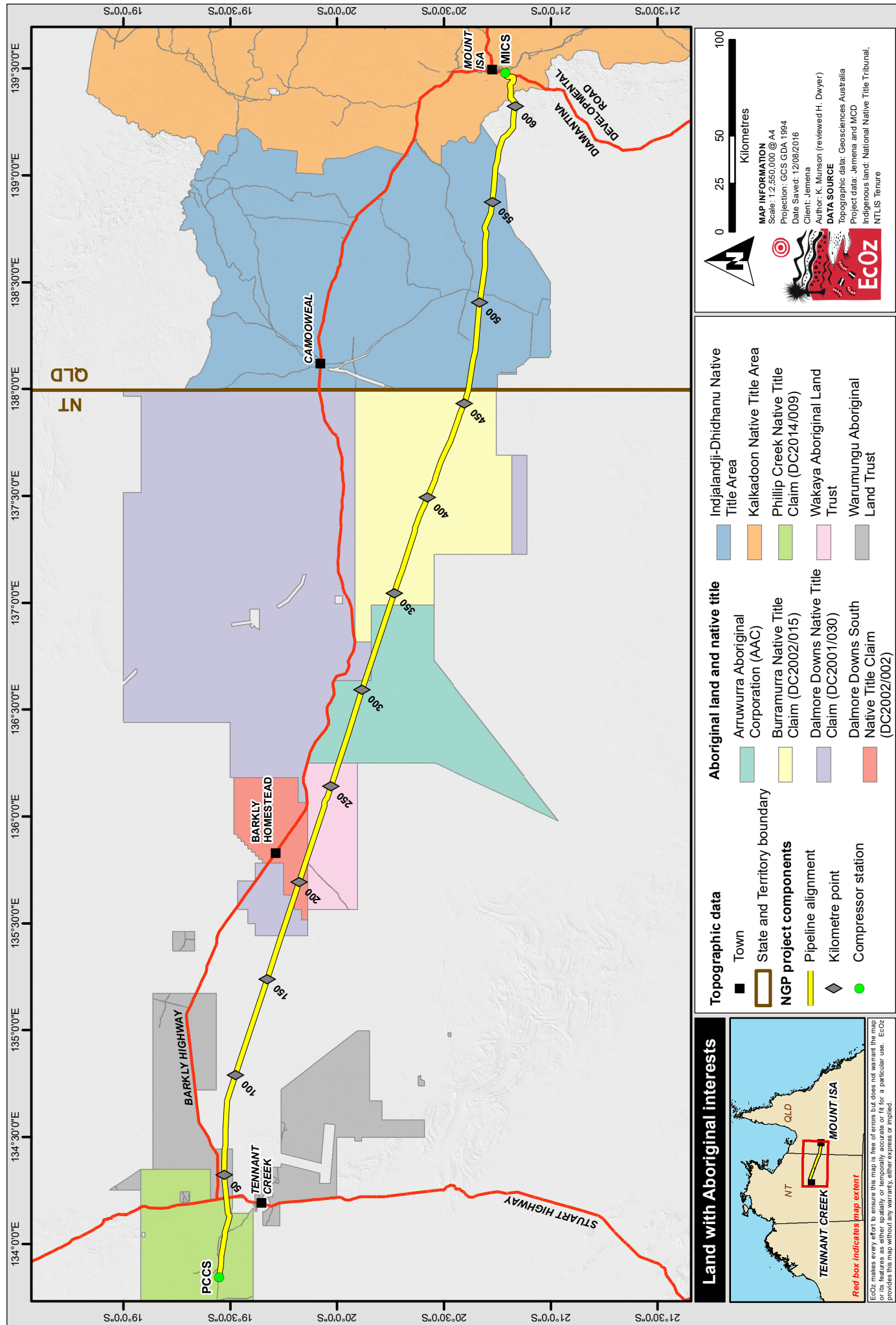


Figure 9-8. Location of Aboriginal land and native title areas



## 9.8.2 ABORIGINAL SOCIAL & ECONOMIC CONTEXT

It is noted above that Aboriginal people comprise a significant proportion of the population in the Barkly and Mount Isa regions.

The Aboriginal community in the regions face significant disadvantage relative to the broader community.

For example in the Barkly Region, the Northern Territory Medicare Local Health Atlas of 2014 (NTML 2014) reported that:

- The socio economic index for the Barkly region is amongst the worst in Australia. This index is “the relative social and economic advantage and disadvantage of a region, by measuring a community’s access to material and social resources and their ability to participate in society.”
- The Barkly region (northern Barkly) was the only area with a significant decline in the Australian Early Development Index (AEDI) in the NT between 2009 and 2012. The AEDI is a measure of how children have developed by the time they start school in terms of physical health and wellbeing, social competence, emotional maturity, language and cognitive skills, communication skills and general knowledge.

Further social and economic indicators include:

- The unemployment rate for Aboriginal people is 23.1% in the Barkly region. This is almost four times the NT unemployment rate, five times the Mount Isa unemployment rate and approximately three and a half times the unemployment rate of Queensland (ABS 2011).
- Aboriginal people in the Barkly region have a median total household income (\$/weekly) of \$811 which is approximately 30% less than the median total household income (\$/weekly) in the Barkly region, 50% less than in the NT, 60% less than in the Mount Isa region and 35% less than in Queensland (ABS 2011).
- 42 Aboriginal people compared to 149 non-Aboriginal people completed year 12 or equivalent as their highest level of schooling (28%) in the Barkly region (ABS 2011)
- When considering the high population of Aboriginal people in the Barkly region post-secondary education levels of attainment are similarly low. For example, 69 Aboriginal people compared to 229 non-Aboriginal people have a certificate level III and IV, 7 Aboriginal people compared to 67 non-Aboriginal have a diploma or advanced diploma qualification, and 11 Aboriginal people compared to 92 non-Aboriginal people have a bachelor’s degree (ABS 2011).
- No Aboriginal people in the Barkly region have reportedly attained a post graduate level university qualification (ABS 2011).

These statistics are particularly relevant to the project when considering recent research conducted by the Australian Government Department of Employment that found:

- The highest reason given by employers in the NT Outback (that includes the Barkly region) for not interviewing job seekers for an employment vacancy was that job seekers lacked experience relevant to the job vacancy. The second highest reason given was that job seekers had insufficient qualifications or training.
- Completing year 12 increases labour market outcomes with more people in this cohort being employed as opposed to people finishing school at a lower year level (Department of Education 2015).

DOE's research indicates that Aboriginal people, especially in the Barkly region, may find securing employment on the project very difficult because of their low labour market participation and similarly low educational attainment levels.

### 9.8.3 LAWS, CUSTOMS AND CULTURE

Pre-colonial times, Aboriginal people in the project area lived a hunter gatherer lifestyle within their traditional lands and with customs and culture characterised by a belief system directly related to the land. Aboriginal peoples' world views and lives were shaped by stories of the dreamtime when the world was formed by mythological beings, passed down through from generation to generation. Peoples' existence was controlled by the availability of foods and other resources directly appropriated from the natural environment but also governed by laws relating to land ownership, trade, travel and relations between language groups, clans and land estate owning groups. Social relations were governed by complex kinship and social behavioural systems between and among the sexes and generations that allowed for the continued existence of the people on the land. Spiritual life arose from the land and the stories of the dreamtime, carried within a framework of ceremonial and song cycles that mapped out the land and the peoples' relationship with it.

As in other parts of Australia, the arrival of Europeans in the project area caused significantly negative impacts on Aboriginal society, initially through the dispossession of their land and the dislocation of people from their land, particularly through the spread of the pastoral industry. Other major impacts from these times were the associated frontier violence and the spread of exotic diseases. Over and above this, Aboriginal people have been subject to the impacts of various public policies that have been implemented over the years.

#### 9.8.3.1 Government Policies

Early government policy toward Aboriginal people since Australia's establishment and to contemporary times can be characterised as having several phases as set out in the following passages. Further and more detailed information can be found in the SIA Scoping Study.

1. Early Years: the early years of Australia's settlement by Europeans significant was characterised by conflict between colonists and settlers and Aboriginal people and with the introduction of exotic diseases and alcohol, reduced the Aboriginal population significantly. In Queensland it has been estimated that at least 10,000 Aboriginal people died violently between the years 1824 and 1908, around the same time that European settlements in the Mount Isa and Barkly regions were being established.
2. Protection: pre Federation and particularly post Federation to early post second world war, in response to the reductions in Aboriginal population arising from the above, policy moved to position of the introduction of the use of missionaries and protectors for their defence. In South Australia, which then included the land area which is now the NT, protectors were appointed and who were supposed to protect Aboriginal people from abuses and provide remnant populations around towns with rations, blankets and medicines. Later in the 19<sup>th</sup> century under legislative arrangements in Queensland in 1897 and in South Australia and the Northern Territory in 1910-11, the policies became more formal and extensive and were aimed at isolating and segregating 'full blood' Aboriginal people on reserves while removing and attempting to assimilate 'half-caste' Aboriginal people including children, into the broader Australian society, restricting contact (including interbreeding). Civil rights of Aboriginal people were severely curtailed including the right to marry, freedom of movement, the consumption of alcohol and the regulation of employment. There were systematic efforts to take part Aboriginal children away from their parents and to educate them in western ways, a particular and relevant example of which was the *Welfare Ordinance Act 1953 (NT)* which remained in place until the 1960's (National Archives, 2016).



3. Assimilation: post Second World War, through to late 1960s, early 1970's. Overlapping with the Protection period and continued problems and criticism of the treatment of Aboriginal people, particularly in central and northern Australia resulted in agreements in 1936 between the States and the Commonwealth that greater coordination should occur and that the policy objective "... should be the absorption at least of 'the natives of Aboriginal origin but not of the full blood'". In 1961 the policy was adopted by the Commonwealth and all the States.

During this period expenditure on health, housing, education and training programs was increased in the NT and elsewhere and the decline in the Aboriginal population in northern and central Australia was stemmed and reversed in the 1950's. In 1967 a referendum was held and the Australian Constitution amended to enable the counting of Aboriginal people in the national census and to allow the Commonwealth Parliament to pass legislation to benefit Aboriginal people.

4. Integration. Assimilation by definition is the process of incorporating or absorbing the customs and cultures of one group of people into another. As outlined above, in the context of Aboriginal Australia this meant Aboriginal people 'accepting the same customs and (being) influenced by the same beliefs as other (non-Aboriginal) Australians' thus implying a loss of their own cultures, languages and identity.

From about the mid 1960's opposition to notions of assimilation emerged across the country, perhaps in part by the successful vote 'Yes' campaign for the 1967 Referendum that raised national awareness of the significant and confronting socio-economic disadvantage facing Aboriginal Australians and the impact of assimilation on Aboriginal languages and cultures.

What ensued was a policy shift, albeit largely unofficial, toward Aboriginal 'integration' into Australian society to celebrate, recognise and support Aboriginal cultures, language, identity and Aboriginal socio-economic development. This shift was complimented by increased government investment into overcoming Aboriginal health, education and socio-economic disadvantage.

5. Self Determination. The Australian national policy of 'self-determination' commenced in the early 1970's with then Prime Minister Gough Whitlam effectively dismantling the White Australia Policy in favour of policies supporting self-management and self-determination. While this relates to broader foreign policy shifts it does provide an important and useful insight into the national psyche and major governmental policy transitions during this period.

Also, during this period the legal rights of Aboriginal people to their land started to be recognised through the courts and legislative process. Perhaps the most famous legislative reform was the advent of the Northern Territory Land Rights Act in 1976 and the Racial Discrimination Act in 1975.

6. Reconciliation. The era of reconciliation between Aboriginal and non-Aboriginal people in Australia started in the late 1980's and was perhaps first marked with the then Prime Minister Bob Hawke committing Australia to a treaty with its first peoples in 1988.

Institutionally the process of reconciliation between Aboriginal and non-Aboriginal people was marked with the establishment of the Australian Council for Aboriginal Reconciliation in 1991 after the passing of the Council for Aboriginal Reconciliation Act 1991. The purpose of the Council and of reconciliation was perhaps best summarized by the then Prime Minister Paul Keating in 1992.

In more recent times (former) Prime Minister Kevin Rudd's national apology to the Aboriginal Stolen Generations in 2008 is widely acknowledged as a profoundly important step toward reconciliation and the current debate concerning Aboriginal constitutional recognition and a treaty between Aboriginal and non-Aboriginal Australia are all symbolic of a strong ongoing commitment in Australia to Aboriginal reconciliation.

Policy today is focused on the Australian Government's policy position of 'Closing the Gap' that is underpinned by annual reporting on Australia's progress toward closing the gap between the socio-economic, health and educational disparity that is still prevalent in Australia between Aboriginal and non-Aboriginal people.

The debate about the best policy approach toward Aboriginal people continues today.

#### 9.8.3.2 European arrival in the Barkly and Mount Isa

The area surrounding Tennant Creek is the traditional lands of the Warumungu people and the area more specifically associated with the proposed Phillip Creek Compressor Station at Warrego is the traditional country of the Walpumpa people, bounding as it does with the beginning of the Central Desert Region. To the east of Warumungu country into Tennant Creek station and the large area of Vacant Crown Land (VCL) the language group changes (as do the land owning groups) to Wakaya, including the people associated with the native title claims on the Dalmore Downs Station.

To the south of the pipeline route and skirting the desert region are the traditional lands of the Alyawarre people, whose dislocation through pastoral activities forced many of them to seek refuge around Alpururulam (Pamela Lyon, 1989). To north of Alyawarre and in the eastern portion of Wakaya country, a Wakaya land owning group, the Arruwurra, hold a significant NT freehold land estate, on behalf of their members.

Further to the east, the traditional owners of the land around West Ranken, Avon Downs, Soudan, Austral Downs and Lake Nash Stations were originally the Bularnu people (Pamela Lyon 1989), all of whom were dispossessed and dislocated much further to the south and many of whom were murdered or died from introduced diseases. The area today is claimed by the people associated with the Burramurra native title claim.

Very nearby in the east is the traditional country of the Indjalandji-Dhidhanu around the Camooweal area and then in the hills surrounding Mount Isa it is the traditional land of the Kalkadoon people.

In the immediate vicinity of Tennant Creek, European contact began in the mid-19<sup>th</sup> century with the passage of Stuart from the south, the subsequent establishment of the Overseas Telegraph Line and Station at Tennant Creek. After the discovery of gold near Tennant Creek in the late 19<sup>th</sup> century and the subsequent development of a significant gold mining industry around the town in the 1920's, moves were made by government to reserve land in the area for the Warumungu Aboriginal people.

Also in the mid-19<sup>th</sup> century, William Landsborough sparked the movement of pastoralists into the area, after his reports of the area's potential, arising from his search for the ill-fated, Burke and Wills. Initially sheep were grazed at Avon Downs and then eventually cattle were farmed over the whole area as it is today.

In the 1920's after Miles found mineralised rocks on the banks of the Leichhardt River Mount Isa was founded to support the mining industry which still exists today.

Significant areas of traditional Aboriginal country were granted as pastoral leases and were stocked from the 1880's onwards. The pastoral industry was largely incompatible with Aboriginal hunting and gathering practices and so many people were forced to settle on the pastoral stations or on reserved land near the towns. Many men worked as stockmen, drovers, butchers and gardeners while women carried out domestic work in the station houses. Payment was generally in rations only and conditions were generally very poor (Anyinginyi 2015).

Commencing in the mid 1960's after the Pastoral Award was enacted and into the 1970's when it began to be implemented, requiring Aboriginal people to be paid equal wages for work on pastoral stations, many Aboriginal people were forced off the stations and into the regional towns.

This period coincided with the Australian Government's Self-Determination policy and in the NT specifically, the enactment of the Aboriginal Land Rights Act and later the Sacred Sites Act.

So from a European settlement history the Aboriginal people in the project area were subject to the significant impacts of the pastoral industry throughout all of the grassy plains and flatlands and the impacts of the mining industry in the mineralised hilly country, bookended at Tennant Creek and Mount Isa.

### 9.8.3.3 Aboriginal society in the region today

Consideration of all of the above begins to help paint a picture of Aboriginal society today. Throughout the project area the Aboriginal people and their forebears have gone through significant dispossession of land and culture and the denial of human and civil rights.

Despite the significant social, cultural and economic impact that Aboriginal people have faced in the region over the past 150 years and that are reflected in the social and economic indicators described above, the desire to maintain traditional Aboriginal cultures remains very strong.

Traditional cultural practice is still conducted and Aboriginal languages are still spoken in the region, often as a first language. Many Aboriginal people living in the project area are very involved with the preservation, maintenance and teaching of traditional cultural practice, while at the same time aspiring to participate in the local and regional and in some cases the national and international economy.

In the Barkly region many Aboriginal people speak several different languages with English frequently being a third, or even fourth language. More than half of the Aboriginal population over 15 years speaks a language other than English at home (ABS National Regional Profile 2006).

According to the Papulu Aparr-kari language centre in Tennant Creek, the Aboriginal languages in the Barkly region include Warumungu, Warlpiri, Alyawarr, Kayetye, Warlamanpa, Wakaya, Mudburra, Wambaya, Jingili, Kudanji, Ngarnga, Binbinga, Garrawa, Yanuwa, Waanyi and Mara (Papulu Aparr-kari 2016).

This reflects a complex cultural and linguistic landscape across the Barkly. Aboriginal traditional cultural practice remains very strong in this region with cultural and linguistic maintenance and intergenerational cultural dissemination being an important priority for the Aboriginal community.

Economically, Tennant Creek is the regional hub for the Barkly. Again, while significant social and economic disadvantage is prevalent in Tennant Creek and the Barkly region, strong economic capability exists. For example, several Aboriginal organisations together with Aboriginal and non-Aboriginal businesses service Aboriginal communities in the region including housing maintenance and other community infrastructure. Aboriginal organisations also provide training, employment, environmental and catering services along with civil and logistics and media services. New partnerships are also emerging between Aboriginal and non-Aboriginal business who will no doubt vie for work on the project but are also being established to participate in the broader local and regional economy into the long term.

Confirmation of this economic aspiration and participation can be found in some Aboriginal groups in the vicinity of the project running highly successful businesses and undertaking large scale contracts in a number of sectors valued at several millions of dollars. New joint venture arrangements are also emerging between some Aboriginal communities and existing businesses and numerous small Aboriginal businesses are operating in the vicinity of the project.

In the Camooweal and surrounding areas the Indjalandji-Dhidhanu people and in the broader Mount Isa region, the traditional lands of the Kalkadoon people, since the late 19th century Aboriginal people have predominately worked in the pastoral and mining industries in these regions however these groups are now diversifying into multiple sectors and fast growing their participation in the local and regional economy.

For example the Indjalandji-Dhidhanu people have undertaken large scale contracts in highway construction, maintenance and associated infrastructure such as bridge construction. They also run a highly successful education and training centre near Camooweal and operate a large employment service out of Mount Isa.

Indjalandji-Dhidhanu are also working to commercialise the production of nanocellulose found in spinifex grass that can be used as an additive to strengthen latex. This has the potential to revolutionise the production and application of latex products bringing significant economic stimulus to the Barkly and Mount Isa regions through the cultivation and processing of spinifex grass.

## 9.9 ECONOMIC CONTRIBUTION

This section sets out the expected potential economic contribution of the NGP to the Northern Territory and more specifically to the Barkly and Mount Isa regions.

The EIS ToR also notes that in providing economic information in relation to the Project, the proponent is not required to disclose commercially confidential information. Jemena notes that the Project is a privately owned and unregulated pipeline and therefore the information in the following sections is constrained by commercial confidentiality.

Jemena has sought to provide an accurate picture through the use of industry benchmarking of the project capital and operating costs. At the regional level the economic benefits are based on Jemena's estimates arising from the studies and stakeholder consultation to date.

Detailed information about the economic contribution is set out in the Economic Impact Assessment at Appendix S.

### 9.9.1 ECONOMIC FEASIBILITY

The Project's economic feasibility was determined through a competitive process undertaken by the Northern Territory Government commencing in November 2014 and completed in November 2015. The process comprised three distinct phases:

- Expressions of Interest (EoI) Phase – which attracted 14 bidders from which 11 were selected to progress to the second phase
- Request for Initial Proposal (RFIP) Phase – through which four bidders were selected to progress to the third phase
- Request for Final Proposal (RFFP) Phase – through which Jemena was selected as the preferred bidder to build, own and operate the NGP.

This process demonstrated the economic feasibility of the Project by the very fact that a significant number of bidders entered into and stayed in the process. Many of these were substantial industry players in Australia or companies associated with large financiers.

### 9.9.2 FINANCIAL CAPACITY

As set out in Chapter 1 of the EIS Jemena is owned 60% by the China State Grid Corporation and 40 per cent by Singapore Power. Jemena owns and operates some \$8.5 billion of assets on the east coast of Australia, including the Queensland Gas Pipeline and the Eastern Gas Pipeline. Further information about Jemena's assets and operations can be found at [www.jemena.com.au](http://www.jemena.com.au).

### 9.9.3 ESTIMATED PROJECT REVENUE

Pipeline tariffs have been set to recover the overall investment in the Project and pipeline and allow shareholders to make a return on their investment.

The NGP is currently designed to carry up to 90TJ/d of gas to Mount Isa. Jemena has posted a base tariff for use of the pipeline of \$1.40/GJ for Firm Forward Haulage (FFH). Nitrogen reduction from the natural gas is essential and adds approximately \$0.72 to the tariff bringing the total to around \$2.12/GJ for gas transported. Other services attract different rates but the FFH rate provides a reasonable basis for future income and is estimated at around \$70 million (m) a year at full capacity. At the time of this EIS the pipeline is approximately one third contracted, but it is expected that at or near full contract capacity will be sold by time of operation.

The NGP will connect into the Carpentaria Gas Pipeline (CGP) at Mount Isa and hence connect northern Australian gas fields to the Eastern Gas Market. Displacement of the gas currently being transported to Mount Isa through the CGP will allow that gas to be sold to other buyers. The operator of the CGP has pipelines that connect the Moomba fields to Curtis Island and this creates the potential for the both displaced and northern Australian gas to supplement domestic gas shortfalls in the eastern States with sales to manufacturers or exports as LNG.

If the displaced gas and extra gas from the northern Australian fields are sold at an LNG netback price the value added to the Australian economy becomes the LNG value (approximately A\$8.50/GJ based on spot LNG prices) less the cost of transport to Curtis Island. Assuming pipeline tariffs of \$3/GJ the value added is around \$180 million a year at full capacity.

The value to Jemena of the pipeline is the potential pipeline tariff income while the value to the Australian economy may be the value of additional upstream production development, domestic gas market development and LNG exports made possible by the interconnection of the Northern Territory and Eastern Gas Market.

### 9.9.4 CONTRIBUTION TO GDP AND GSP

The Project contribution to the economy can be described in three phases – construction phase, operational phase and broader economic impact.

The construction phase over two years involves an estimated total investment of \$775 million (m) of which \$637 m will be spent in Australia. The flow on effect of this investment is to increase the economic output of Australia by \$1.379 billion (b) with the Northern Territory impact a total of \$213 m and the region \$160 m.

The operational phase of at least 30 years involves an estimated 40 positions with an equivalent 18 full time equivalent jobs. The economic impact of the annual expenditure is to create an additional \$1.0m in economic output in the region, \$1.8 m in the Northern Territory and \$18 m in Australia. Over 30 years, this expenditure can be scaled up to \$30 m in the region, \$54 m in the Northern Territory and \$540 m in Australia.

In terms of broader economic impact and depending on the volume of gas that may be displaced from the CGP pipeline to the Mount Isa market and subsequently sold into domestic or LNG (or equivalent value sales), the value to the Australian economy might be as high as \$180 m a year or \$5.4 billion (b) over 30 years.

### 9.5.5 Taxes

Jemena is an income tax paying company in Australia and the project will contribute to this tax paying position over its economic life. Jemena will effectively pay income tax at the corporate tax rate on its taxable income, which includes any contributions from the project. Jemena will also pay state-based taxes such as payroll tax and stamp duty in relation to the project.

### 9.5.6 Capital and operating expenditure

Final financial data is not provided specific for the project due to commercial sensitivity and confidentiality matters, but benchmarks from other gas transmission pipelines and feasibility study data provide an indicative capital cost of \$1.24 m per kilometre meaning a total of \$775m. Based on a typical cost breakdown it is estimated that \$275m (35 per cent) will be spent on equipment and materials for the compressor stations and pipeline. The largest cost category will be the actual construction at approximately \$338 m representing 44 per cent of the total cost (Table 9-2). In this breakdown, civil engineering represents the design and supervision while construction and services are transport and installation activities.

**Table 9-2. Construction costs by nature of expenditure**

Component	Share (%)	Cost (\$m)
Materials procurement	35%	275
Civil engineering	4%	30
Construction and services	44%	338
Professional and technical services	4%	30
Planning and administration	13%	102
<b>TOTAL</b>	<b>100%</b>	<b>775</b>

An estimated \$138 m will be spent on coated steel pipe, compressor packages and other equipment imported from overseas leaving \$637m invested in Australia (Table 9-3). This includes Jemena planning and management costs, costs of the lead construction contractor and all costs associated with land access and pipeline construction. The estimated expenditure in the Northern Territory is about \$111m with \$75m of this in the region.

**Table 9-3. Construction cost by location (\$m)**

Sector	Overseas	Australia	Australia sub-component	
			NT	Region
Equipment Procurement	\$138	\$137		
Civil engineering and Construction		\$30		
Construction services		\$338	\$111	\$75
Professional and technical services		\$30		
Planning and administration		\$102		
<b>TOTAL</b>	<b>\$138</b>	<b>\$637</b>	<b>\$111</b>	<b>\$75</b>

Local expenditure will include compensation and other payments to Pastoral Station lessees. Traditional Owners, Land Councils, site preparation and a share of the capital expenditure based on the wages component involved in construction and installation. The Northern Territory expenditure includes the region spend.



The flow on effect of this investment is to increase the economic output of Australia by \$1,379m with the Northern Territory impact a total of \$213 m and the region \$160 m (Table 9-4).

**Table 9-4. Construction phase economic impact**

Sector	Area	Output multiplier (\$m)	Aust output (\$m)	NT output (\$m)	Region output (\$m)	Aust impact (\$m)	NT impact (\$m)	Region impact (\$m)
Civil Engineering and construction	Australia	2.22	30			67		
	NT	2.91						
	Region	2.13						
Construction services	Australia	2.25	475			1,067		
	NT	1.92		111			213	
	Region	2.14			75			160
Professional and technical services	Australia	2.00	30			60		
	NT	1.78						
	Region	2.10						
Administration	Australia	1.81	102			185		
	NT	2.76						
	Region	2.05						
<b>Total</b>			<b>637</b>	<b>111</b>	<b>75</b>	<b>1,379</b>	<b>213</b>	<b>160</b>

The 30 year operating phase of the Project is far longer than the construction phase and will have longer term consequences although operating costs are relatively low.

The operating workforce includes financial and management staff and technical staff engaged in daily pipeline operations and management. Most of these employees will be located in Jemena capital city offices. Pipeline operations are highly sophisticated and electronic monitoring systems mean that daily operations can be done remotely with a small number of people. There will be some local jobs largely involved with maintenance of the processing plant, pipeline and pipeline corridor.

The same industry sectors are involved in pipeline operations as the construction phase with expenditure in plant and pipeline maintenance, land management and administration services. However, the ABS industry sector statistics include a gas supply sector for this region and hence the multiplier factors are used for this sector (Table 9-5).

As with construction, a population weighted multiplier factor was calculated for the region from the multipliers for the Mount Isa and Barkly Local Government Areas. For the operations phase of the Project, the employment multipliers range from 1.09 to 1.25 in the LGAs with a weighted average of 1.21 and 1.63 for the Northern Territory.

The flow on impact is to create 36 jobs in Australia with 16 of these in the region and potentially 21 in the Northern Territory (Table 9-5). Household income will increase in the region by \$1.9 m and by \$3.7 m in Australia. The expenditure on operations will see Australian economic output increase by \$18 m.

**Table 9-5. Operational phase impacts**

Sector	OS	Aust	NT	Region
Jobs (FTE)	0	18	13	13
Job impact (FTE)	0	36	21	16
Household income (\$m)	0	\$1.7	\$1.2	\$1.2
Income impact (\$m)	0	\$3.7	\$1.8	\$1.9
Expenditure (\$m)	\$0.3	\$8.9	\$0.7	\$0.5
Economic impact (\$m)	na	\$18.2	\$1.8	\$1.0



### 9.9.5 REGIONAL ECONOMIC OPPORTUNITIES

Jemena has been liaising closely with communities and businesses along the proposed route from since May 2015 and significantly since award of the Project in November 2015, to harness as much local and Indigenous participation as possible in the construction and operations of the Project. Based on that stakeholder consultation and an analysis of business capacity, Jemena determined that:

- approximately 67 per cent of the 200 supply contracts could be competitively tendered for by Northern Territory businesses with an estimated value of \$112m in the construction phase and \$0.5m during the operations phase
- approximately 63 per cent of the potential 900 jobs could be filled from the Northern Territory labour market meaning a potential 386 Full Time Equivalent (FTE) jobs
- during the operations phase an estimated 38 out of 41 jobs could be filled from the Northern Territory labour market, resulting in a potential 12 FTE
- approximately 56 contracts have been identified that could be undertaken by Indigenous businesses and organisations and at least 162 jobs have been identified that could be filled by Indigenous people.

The achievement of these estimates will be dependent on the competitiveness of individual business, individual interest and aspiration.

To ensure remote communities benefit as much as possible from the project in the long-term, Jemena will use a local content model that seeks to the maximise the use of goods, services and labour from the Barkly and Mount Isa regions, the Territory more broadly and western Queensland, while providing full, fair and reasonable opportunity to all Australian suppliers.

In addition, Jemena will invest in a variety of capacity building initiatives as set out in section 9.5.4.

### 9.9.6 RESIDUAL INFRASTRUCTURE

There will be very little open access infrastructure once the Project has been completed with all access tracks rehabilitated although those on pastoral or Aboriginal land may be maintained by the landholders.

### 9.9.7 LOCAL COMMUNITY CONTRIBUTIONS

Jemena intends to implement a Remote Community Social Investment Program as set out in section 9.14.5.

### 9.9.8 NET ECONOMIC BENEFIT

Economic impacts of the Project have been assessed at the region, Territory and Australian economy levels.

#### 9.9.8.1 Region

Local benefits will be through expenditure in the construction and operating phases by the company on local contractors and local employees. Jemena estimates that 100 contracts with an estimated value of approximately \$84 million could be competitively tendered for and 309 FTE jobs could be filled at the regional level during the construction phase. During the operations phase, Jemena is targeting 11 contracts with an estimated value of \$500,000 a year and 30 jobs, equivalent to approximately 9.6 FTE jobs. Jemena hopes to provide 42 contracts and 122 jobs for Indigenous employees over the Project life.

### 9.9.8.2 Territory

At the Territory level, Jemena is targeting 67 per cent of the 200 supply contracts for tender by Northern Territory businesses with an estimated value of \$112m in the construction phase and \$0.5m during the operational phase. The company is hopeful that 63% of the potential 900 jobs could be filled from the Northern Territory labour market meaning a potential 386 FTE jobs. During the operational phase an estimated 38 out of 41 positions could be filled from the Northern Territory labour market, resulting in a potential 12 FTE.

### 9.9.8.3 Australian

As outlined in section 9.3.4, the outcome for the Australian economy will depend on the gas sale opportunities. Jemena will receive the benefit of gas pipeline tariff revenues while the national economy has the potential to see additional gas sold to Australian or export markets. The annual revenue potential is from about \$70 m if tariffs alone are considered to as much as \$180 m a year or \$5.4 billion over 30 years if gas is displaced from Queensland and South Australia producers and used for domestic manufacturing purposes or sent for export as LNG.

## 9.10 SOCIAL AND ECONOMIC RISK ASSESSMENT

Social and economic risks associated with the Project planning, construction and operational phases were identified and assessed using the procedures and criteria described in Chapter 5. In accordance with the *NTEPA Guidelines for the preparation of an Economic and Social Impact Assessment* the risk assessment sought to identify potential positive and negative impacts on local and regional residents and communities in terms of:

- safety
- business, training and employment opportunities
- housing and accommodation availability and affordability
- amenity
- service provision and potential for overloading services, especially in remote areas e.g. public transport, road networks, health services, education, police services
- recreational and cultural opportunities
- community cohesion and resilience.

The Economic and Social Risk Register is documented in Appendix F2. The risk assessment discussion presented in this chapter focuses on community social health and well-being, and risks relating to economic development. The risk assessment also identified potential social impacts associated with risks to cultural and heritage and human health and safety, these are further discussed in Chapter 8 and Chapter 10.

Jemena has undertaken an internal review of both social and economic impact and opportunity, based on the Project definition to date (refer Chapter 2), desktop research and analysis summarised in the earlier sections of this chapter from the SIA Scoping Study (Appendix R) and Economic Impact Assessment (Appendix S), and also a significant amount of stakeholder consultation and local knowledge gained since Jemena commenced planning the Project in May 2015.

The risk assessment process assessed the likelihood and consequences of each potential social and economic impact in relation to the following objective defined by Section 5.6.1 of the EIS ToR:

*“To monitor and manage the intended and unintended social and economic consequences, both positive and negative, of the Project.”*

Opportunities were assessed according to the criteria presented in Section 9.13.

A total of 67 social and economic risks<sup>3</sup> were identified. The sections below provide a more detailed discussion of potential impacts, associated risks and proposed control measures. The sections cross-reference the risk numbers (#) from the Economic and Social Risk Register in Appendix F2.

## 9.11 COMMUNITY SOCIAL HEALTH AND WELL-BEING RISKS

There are a variety of risks associated with community social health and well-being arising from the Project throughout all phases. These are further discussed in sections below.

### 9.11.1 LAND NEGOTIATIONS AND AGREEMENTS

These include the risk that inter and intra-family conflict could occur in Aboriginal communities through concerns about the way that land negotiations are being conducted and who with, the way that benefits from land agreements are to be distributed and over people missing out on employment or business opportunities with the Project (Risk references #7, 23 and 26). This impact has occurred on many projects in remote areas of the Northern Territory and elsewhere and can potentially lead to reduced social cohesion over a timeframe beyond that of the Project that gave rise to the conflict. Accordingly the inherent risk (without mitigation) is assessed as **SIGNIFICANT**.

In managing these risks, Jemena is undertaking the land negotiations through well established, processes with Land Councils, Native Title Representative Bodies and Prescribed Body Corporates and other relevant Aboriginal Corporations. Similarly, the distribution of direct monetary benefits will be managed by these organisations in accordance with their established practices. These established processes are understood by Aboriginal people and have proven to be effective in reducing potential for conflict on other similar projects in the Northern Territory; they are considered the best available way for Jemena to negotiate with Aboriginal people and are anticipated to be effective in reducing the residual risk of conflict under risk #7 and 23 to **LOW**.

In relation to employment and business opportunities (risk # 26) Jemena intends to continue its business and community briefings and implement a Regional Employment Plan (see section 9.13.2), including a Regional Recruitment Strategy to ensure that the community is fully apprised of Jemena’s approach to employment and contracting. The information disseminated through the Community Reference Groups (CRGs) (refer 9.13.1) and the other methods described in Chapter 4 of this EIS will also assist.

The establishment and implementation of plans that are based on transparent communications and consultations about fair recruitment and employment processes for Aboriginal people have been shown in other resource sector projects to assist in reducing conflict over perceptions of unfair employment processes. In addition, CRGs are a common approach in the resources industry, used to bring key stakeholder representatives within a community together in order to disseminate information. After implementation of these measures, the residual risk is assessed as **LOW**.

<sup>3</sup> This number does not include all Culture and Heritage and Human Health and Safety risks identified through the ESIA risk assessment process. These are captured under the separate risk categories of Historic and Cultural Heritage and Human Health and Safety; discussed in Chapter 8 and Chapter 10 respectively.

### 9.11.2 ABORIGINAL LAND AND LIVING AREAS

Risks and mitigations associated with Culture and Heritage are contained in chapter 8 with the exception of two risks which have social impacts as well as cultural and heritage impacts across the three project phases.

The risk of unauthorised entry onto Aboriginal land causing a breach of the Aboriginal Land Act and offence to traditional owners can occur in the planning, construction and operational phases (risk#2, 15, 75). In the planning phase this risk (#2) is assessed as **SIGNIFICANT** given that this risk has occurred on previous projects and while the impact on cultural life would be short-term the consequences are assumed to be serious. In the construction phase it is less likely this will occur but the consequences remain serious, accordingly the risk is assessed as **MODERATE**. As the Project will be further matured in its management systems, and during the operational phase when the project footprint is small and work activities are well planned the risk is assessed as **LOW** for the operational phase. The mitigations are based on established processes, which are already working effectively during the planning phase, as such the residual risk is assessed as **LOW**.

Similar to the above, the second risk spans the three project phases and refers to the potential impact of uninvited entry into Aboriginal living areas (e.g. family outstations) by project personnel which can be of concern to those residents. During the planning phase (risk #5), construction phase (#13) and operations phase (risk #75) prior to mitigations the risks were assessed as **LOW**.

The measures to mitigate the potential impacts include identifying relevant communities and ensure they are covered by access restrictions that are communicated to Project personnel are well established industry practice. Given this and that the identification process is already well underway for the Project the post-mitigation residual risk is assessed as **LOW**.

### 9.11.3 COMMUNITY CONCERNS ABOUT NT ONSHORE GAS INDUSTRY

During the Planning phase a risk that has arisen (risk # 82) relates to the potential for local community concern, anxiety and division, i.e. a negative impact on local social cohesion, resulting from broader community concerns and division over the onshore gas industry in the NT, about the environmental impact of hydraulic fracturing (fracking) of exploration and production wells.

The issue is a current and controversial Northern Territory wide public affair at present and is subject to intense political debate regarding propositions a moratorium on fracking and further research on the one hand versus, the existing research and regulatory regime on the other. Pro moratorium special interest groups, such as the Central Australian Frack Free Alliance, are seeking a complete ban on fracking and have engaged with Traditional Aboriginal Owners and other Aboriginal people at the local level in opposition to the Project.

The assumptions made in assessment of this risk, without mitigation is that it is possible it could occur but that if it did it could be managed through good communication – the inherent risk assessment is therefore **SIGNIFICANT**.

In managing the risk Jemena will continue to engage with the broader Tennant Creek community and directly with Traditional Owner groups and other Aboriginal people through direct briefings and meetings about the project to explain the nature of the project, i.e. sources of foundation and future gas, that the NGP is a transporter of gas and not a producer. Also that approval decisions regarding any onshore gas projects would be made separately to any approval decisions about the NGP. These communications would also occur through the proposed CRG.

Jemena will also engage directly with the special interest groups concerned to understand and respond to their concerns as much as is reasonably practicable.

The expected effectiveness of the above communications program would result in a far greater understanding of the nature and purpose of the NGP and how it relates to the onshore (conventional and unconventional) gas industry. While community concern about the issue may not be completely addressed it would certainly be alleviated and so the residual risk is expected to be **MODERATE**.

#### 9.11.4 INCREASED INCOMES

Greater levels of incomes circulating in the community have potential to cause people employed on the Project, who are not used to managing money, to engage in increased levels of alcohol and drug consumption that leads to an increase in anti-social behaviours, crimes against people and property, and consequent negative interactions with the criminal justice system. This can have a flow on effect of greater pressure on health and other community services (risk #24).

An associated risk (#25) is that people from remote communities who are employed on the Project gravitate to centres such as Mount Isa and Tennant Creek during rostered work breaks to spend their income and engage in the behaviours mentioned above. These people may end up not returning either to home or to work. In addition to the consequences mentioned above, increased abandonment of current employment might occur. This risk occurs already in the region and in the Northern Territory more broadly and often around major regional events such as the Tennant Creek and Mount Isa annual shows, the annual rodeo circuits and other events. In particular, risk #25 has shown to be exacerbated by short term events where individual incomes increase or monetary windfalls occur. These risks have occurred associated with other resource projects in the NT the inherent risk is assessed as **SIGNIFICANT**.

Given that this is a significant issue that already exists in the towns and occurs frequently, Jemena's ability to influence community behaviour around these events will be limited.

Jemena's approach to these risks is to incorporate appropriate modules in its Project Ready Training Programs (see section 9.14.3), to provide support in the work place (for example through the Local and Indigenous Participation Field Supervisor) and to coordinate with the human service agencies in both Tennant Creek and Mount Isa to develop strategies to support healthy worker behaviour on rostered breaks.

The above strategies are designed to address risk numbers #7, 23, 24, 25 and 26 in the environmental risk register (Chapter 5) and are complementary to the strategies referred to in section 9.11.1 above. The combination of these approaches as well as ongoing communications and stakeholder engagement has been shown in the past to be effective in reducing these risks. Accordingly, following mitigations risks 24, 25 are assessed **MODERATE**.

#### 9.11.5 COMMUNITY PARTICIPATION

It is possible that people employed on the Project are unable to maintain their active participation in local community and volunteering, e.g. at sporting and community events and that this results in a decrease in social amenity and cohesion (risk #27). While the possible impact of this risk in terms of the length of time it would occur is relatively short given the Project construction time frames, i.e. less than two years it has been shown before that projects which absorb people particularly from small communities can impact on community participation. Accordingly the inherent risk is assessed as **MODERATE**.

Jemena will seek to address this through direct consultation with local community organisations to determine whether strategies can be put in place for mitigation. The CRGs will also play an important role in this consultation process. Based on this mitigation measure the residual risk remains a **MODERATE** level, however the expected consequences of the impact is reduced.

### 9.11.6 ILLEGAL ACTIVITIES AND UNAUTHORISED ACCESS TO PROJECT FACILITIES

The main pipe lay down yard will be established near Tennant Creek and as a result may attract people seeking to undertake illegal activities such as vandalism and theft. An associated risk is that people who engage in petrol sniffing will seek to obtain petrol from this site and other Project locations, or inadvertently enter the Project footprint in hazardous areas causing damage to property or themselves (risks #29, 30, 33).

Jemena will establish a Project Security Plan in consultation with local police and other relevant stakeholders which will include the secure storage and monitoring of petrol and other aromatic fuels on the Project.

Without controls there is a **MODERATE** risk that the public inadvertently enter the Project area into hazardous zones resulting in injuries or property damage. Jemena's Traffic Management Plan and Security Plan will be designed to ensure this does not occur.

Detailed Project security plans developed in consultation with local stakeholders, for example police, fire and emergency services and local councils are a standard feature of large resource sector projects. Broadly they are designed to manage security of Project staff and equipment as well as manage community safety through strategies to communicate the presence of hazardous or high risk areas and establishing physical barriers to those areas. Based on effective security and/or transport management plan to manage these (and other) risks, the residual risk rating for risks #29, 30 and 33 is assessed as **LOW**.

During the operational phase there is a risk that people might use the easement and any temporary and permanent access tracks for improper access (#79). The reasons that people might seek to use the easement for unauthorised access are varied and include personal reasons, hunting, discreet travel, illegal activities etc., which could cause a range of negative impacts on existing land users. As there are a variety of scattered communities along the pipeline route it is possible this could occur and with legitimate land users potentially negatively impacted in the short-term the pre-mitigation risk level is assessed as **MODERATE**.

The controls that Jemena can implement will mitigate the risk to a low level and these would include: minimising any access tracks along the easement except in agreement with landowners, not putting signage on permanent access tracks, progressively rehabilitating temporary access tracks and ensuring ongoing communication with landholders. In essence this would result in limiting physical access and being a part of the local rural watch. These are standard industry practice for mitigating this risk and as such the residual risk ranking is assessed as **LOW**.

### 9.11.7 WORKFORCE ACCOMMODATION MANAGEMENT IN TENNANT CREEK

Jemena has determined that it will establish a construction camp at the PCCS to cater for the majority of PCCS construction workers. Workers that will be accommodated in Tennant Creek will be those working at the pipe laydown yard and in management and administration.

The establishment of the PCCS construction camp will significantly reduce the risks that would have arisen had Jemena chosen to accommodate in excess of 200 people in either a workers' camp in Tennant Creek or in existing commercial accommodation. These risks included a significantly changed demographic profile impacting negatively on social amenity and cohesion and the potential for anti-social behaviour arising from the interaction between a large workforce and residents in the town.

These risks could see increased incidence of alcohol and drug use, of formal and informal sexual interaction and the attendant consequences, including increases in STIs and other health impacts, crimes against people and property. Across a range of communities both in Australia and internationally that are in



close proximity to large resource sector projects these risks have been shown to occur, with differing levels of consequences expected. As such risk #36 is assessed as SIGNIFICANT, risk #37 as HIGH, and #38 as **MODERATE** prior to mitigation.

An associated risk with the establishment of a workers' camp in Tennant Creek would be an increased pressure on municipal services such as sewerage systems, waste management, power and water supply (#39). The establishment of the PCCS facility removes this risk.

Using a dedicated construction camp facility to accommodate large workforces where a project is close to a community has been shown in the past to reduce the risks identified in this assessment. Examples of this are in the iron ore mining areas of the Pilbara in Western Australia, where construction worker camps have been established to house large, short-term workforces to assist in managing impacts on small communities and economies from a transient workforce.

The use of a construction camp, combined with drug and alcohol policies and staff codes of conduct, an overall Worker's Accommodation Plan and ongoing consultation with the Tennant Creek community are expected to provide effective controls and as such risk #36 is revised to **LOW** and 37 is revised to **MODERATE** with these mitigations and risk #38 assessed as **LOW**.

#### 9.11.8 VISUAL AMENITY

Visual amenity is a measure of the visual quality of a site or area experienced by residents, workers or visitors (sensitive receptors). Section 5.9.4 of the EIS ToR requests a discussion of the potential visual amenity impacts associated with each phase of the Project.

The land the NGP traverses is sparsely populated and used mainly for beef production and Aboriginal traditional land use. It is remote from residences and other sensitive receptors. Sensitive residential receptors within 20 km of the pipeline route are described in Chapter 2 Section 2.3.4. In the Northern Territory the closest receptors are an Aboriginal family outstation located 3.4 km from the pipeline and a pastoral homestead located 3.5 km from the pipeline. Given the large separation between the Project activities and these receptors, it is not expected that Project activities will be visible from these locations.

Areas of significance, for example national parks, sites of conservation significance, Aboriginal sacred sites and heritage places, are also considered sensitive receptors for the purpose of assessing visual impacts. There are no national parks or sites of conservation significance located within 20 km of the Project footprint (refer Chapter 6 Section 6.1.6 and 6.1.7). Aboriginal Sacred Site custodians have not raised any concerns about the Project potentially impacting on the visual amenity of sacred sites. There are a number of declared heritage places within 20 km of the Project footprint, some of which would receive regular visitation (refer Chapter 8 Section 8.2.1). The closest heritage place is the Tennant Creek Telegraph Station, which is located 5 km from the pipeline route. Given the large separation between the Project activities and areas of significance, it is not expected that Project activities will be visible from these sites.

The pipeline crosses some major roads and highways (e.g. Warrego Road, Stuart Highway and Diamantina Developmental Road) and the Adelaide to Darwin railway line. The pipeline also crosses a number of minor unsealed access routes to remote homesteads and communities. These crossing points are the main publicly accessible areas from which Project activities will be visible.

The pipeline route is located south of the Barkly Highway and during construction may be visible from the highway around Threeways and for approximately 20 km to the east. During operation, signs and markers may be visible. After this point the pipeline route is located further away from the highway and therefore activities are not expected to be visible, except for some signage and traffic controls around access tracks.

The main visual impact during the construction phase will be associated with vegetation clearing and earthworks, visibility of people, vehicles, plant and equipment, vehicle movements and stockpiles. Activities will be visible from the road, rail and track crossings, and for a short distance along the Barkly Highway. As



the activities will be occurring in a remote area with limited other activity and development, there will be some impact on visual amenity for the occupants of vehicles moving through the areas. This impact is expected to be minor given the short distances over which the works will be visible i.e. people's exposure will be limited. Furthermore, the short duration of the construction phase (<12 months) and progressive reinstatement of the construction ROW will ensure there are minimal long-term impacts accordingly risk #83 is assessed as **LOW** before controls are in place. Mitigation measures will focus on communicating with the local community, for example through the Tennant Creek CRG, Project newsletters, etc. With these controls in place the residual risk ranking remains **LOW**, however the likelihood is reduced.

During the operational phase, visual amenity impacts will be limited to the areas around the compressor stations and above-ground facilities. The buried pipeline will not be visible and the ground will be reinstated and allowed to revegetate. However, it is expected the ROW will still be visible due to signage and the absence of larger trees compared to surrounding areas.

Above-ground infrastructure will be visible for the life of the Project. The MLV and CP sites are located within small fenced compounds which will be visible from access tracks; these tracks generally have little to no public access. Therefore, visual amenity impacts will be limited to a small number of people who use the same tracks to access homesteads or communities.

The PCCS is the main facility (in the Northern Territory) which will be visible from publicly accessible areas. The facility is located on Warrego Road, adjacent to an existing gas compressor station and the AGP. The infrastructure at PCCS will be of varying heights, with the height of the flare stack expected to be up to 40 m. The facility will be visible from the Warrego Road, which receives some local traffic, and the pilot flare is expected to be visible over larger distances at night. The facility infrastructure is not expected to be visible from the Stuart Highway, which is located approximately 39 km to the east of site or the Mungalawurru Family Outstation which is located approximately 28 north-west of site.

## 9.12 ECONOMY AND DEVELOPMENT RISKS

One of the primary risks that was identified and sought to be addressed in the EIS ToR was the potential for the Project not to realise the social and economic benefits that were originally envisaged. Inherent in that overall risk is a variety of risks associated with economy and development, which are discussed below.

### 9.12.1 PROCUREMENT AND CONTRACTING

It was identified early in Jemena's considerations that local businesses may miss out on contract opportunities through (a) a lack of information about the opportunities available, or (b) a lack of capacity to competitively tender for works (risk #48 assessed as **SIGNIFICANT** pre-mitigation and risk #80 assessed as **MODERATE** pre-mitigation).

Also, without information about the Project and the opportunities available it was thought that some businesses may over invest in expectation of winning contracts on the Project but are then unsuccessful (#50). This potential for over investment has occurred in the past. During operation of the Ravensthorpe mine in Western Australia local businesses in the nearby towns of Hopetoun and Ravensthorpe invested substantially in the expectation of securing contracts with the mine. When the work did not eventuate many local businesses were negatively impacted.

There is also a risk that people may embark on new business ventures based on Project contracts won and then see this business fail early as many small businesses do, particularly once any Project contracts have been completed (#51). There are some examples of this occurring in Western Australia and Queensland where locally based companies working on large projects have faced difficulties following the conclusion of project contracts.

In addressing these risks Jemena has undertaken a significant level of business community engagement and briefings, as set out in Chapter 4 and referred to further below. This activity will continue through the ICN network, Jemena's own networks and the CRG referred to in section 9.5.1 above. In addressing lack of capacity Jemena has established the SME Business Investment Fund, which allocates up to \$500,000 for this purpose (refer section 9.14.4.2). In addition, Jemena will communicate to any new start-ups that are awarded contracts about the risk of early failure and the importance of adopting strategies to manage this in their business plans.

In implementing its approach to local content, from the very beginning, Jemena has ensured that all 1st and 2nd tier contracts have local content requirements included. This will ensure that 1st and 2nd tier contractors do not fail to maximise the use of local goods and services from the regions and so local businesses do not miss out on opportunities as a result (risk #49 assessed as **SIGNIFICANT** before controls are in place). The inclusion of local content requirements into Project contracts is a common feature in the resource sector to support local content outcomes.

Broadly, these risks are mitigated as described above through effective and ongoing Project communications and the implementation of Jemena's approach to local content as contained in the Project's Industry Participation Plan. A strategic stakeholder engagement program (as described in chapter 4) which provides ongoing communication with stakeholders is now considered standard industry practice to manage risks associated with people not having enough information about a Project (risks #50, 51). Accordingly, with these mitigations the residual risk is assessed as **LOW**.

Through the overall implementation of Jemena's approach to local content and specifically the inclusion of local content requirements in 1<sup>st</sup> and 2<sup>nd</sup> tier contracts the residual risk level for risks #48 and 49 is assessed as **MODERATE**.

### 9.12.2 EMPLOYMENT

In a similar vein to contracting opportunities it was identified that there were risks associated with local and Aboriginal people missing out on employment opportunities with the Project (risk #54, 81 assessed as **SIGNIFICANT** and **MODERATE** respectively), conflict arising over perceptions of unfair employment processes (risk #26 assessed as **SIGNIFICANT** before controls), and the Mount Isa labour market overshadowing that of the Barkly region, resulting in fewer employment opportunities for Barkly residents (risk #58 assessed as **SIGNIFICANT**).

These risks have been identified and assessed as such for two main reasons. First, there are numerous examples nationally, including in the Northern Territory, of local and Aboriginal communities conveying their strong dissatisfaction of perceived poor local employment outcomes on major projects. Communities are highly attuned to issues concerning local content and closely monitor the performance of proponents in this regard. This is especially true of relatively small towns such as Tennant Creek where local content outcomes are clearly visible and have real impacts on individuals and the local community and economy.

Secondly, since Jemena commenced engaging with both Aboriginal and non-Aboriginal stakeholders in the Barkly and Mount Isa regions a recurring theme raised during consultations has been a strong sense of disappointment expressed by some stakeholders that the operation of major projects in the region has not had the expected positive impact on the local labour market and businesses.

The baseline mitigation for these risks is through ensuring all 1st and 2nd tier contracts have local content requirements included that seek to drive local business and employment outcomes. These requirements will ensure that 1st and 2nd tier contractors do not fail to maximise the use of local and Aboriginal labour from the regions and so local and Aboriginal people do not miss out on opportunities as a result.

Further, Jemena (with the support of its construction contractor for the Project) is also implementing a comprehensive Regional Employment Plan (REP). The REP contains a significant set of initiatives to support the successful employment of local and Aboriginal people, including the establishment of the NGP

Jobs Portal, the Project Ready Training Program, the Tennant Creek Social Enterprise Opportunity and the proposed Gas Operator Training Programs. These initiatives are set out further in section 9.5.3.1 below. Based on the above suite of initiatives the post mitigation assessment of risk # 26 is **LOW** and risks #54, 58, 81 are **MODERATE**.

### 9.12.3 INFLATIONARY PRESSURES, REDUCTION IN COMMUNITY SUPPLY

Discussions with stakeholders revealed a concern that inflationary pressures might occur that would result in increased prices and economic hardship for locals not involved in the Project. Similarly, that the Project demand might result in a reduced level of goods and services to support existing community requirements (risk #52 and 53). Risk #52 is assessed as **MODERATE** before controls given the potential impact of higher prices and that the risk has occurred in the past in resource sector communities in Australia where large projects with increased buying power raise prices for a short period with a negative flow on to the local community which cannot match the resultant increases. Darwin has seen such impacts in the past decade with the construction of two LNG plants. Risk #53 refers to the Project causing a reduced level of goods in the communities around the Project area. It was ranked as **LOW** prior to mitigation given that suppliers in the area (Tennant Creek, Barkly Homestead, Camooweal, and Mount Isa) are on major transport routes and as such the impact is assumed to be short-term.

Through the Community Reference Groups Jemena intends to communicate understanding of Project demand impact in order to lessen the possibility of false demand signals and so unnecessary price increases and so that local suppliers can appropriately manage inventory levels. While Jemena cannot stop entrepreneurial speculation and market behaviour the communication effort should have a dampening effect on unrealistic and unsustainable price impacts.

An associated risk that was identified by stakeholders was that the Project fly in, fly out workforce component might take up available capacity on regional flights, resulting in displacement of other travellers, e.g. tourists, government service workers and other industry workers, i.e. particularly in Tennant Creek (risk #55). Jemena will obviate this risk to the extent reasonably practicable by ensuring that the bulk of workers are flown in and out on charter aircraft.

As the construction phase of the Project is relatively short and these mitigations have been successfully implemented in other projects, the post mitigation risk level for risks #52, 53 and 55 is **LOW**.

### 9.12.4 LABOUR DISPLACEMENT AND LOCAL WAGE PRESSURES

A very typical risk that arises with projects being implemented near small populations is that local government, the pastoral industry, the tourism and hospitality industry, businesses and community organisations lose workers to the project (risk #56). A related risk is that there might be increased costs to the above sectors through a need to pay increased wages and conditions to existing staff in order to retain them (risk #57). This has been seen across a number of resource sector areas of Australia, for example in the Bowen Basin in Queensland, Darwin in Northern Territory and the Pilbara in Western Australia with associated serious, but relatively short-term consequences and as such these risks are both assessed as **SIGNIFICANT** without any mitigation.

Jemena will seek to mitigate this risk through the transparent implementation of its Regional Employment Plan, including selection processes for the Project Ready Training Program and transparent communication of employment recruitment processes by contractors through the NGP Jobs Portal. Local government, businesses, pastoral industry and community organisations will also be briefed regarding the timing and extent of Project labour demand. These mitigations represent a substantial range of activities which have in part been successfully deployed on other projects. Accordingly, these activities are expected to see risk #56 reduce to a **LOW** level after mitigation.

### 9.12.5 MOUNT ISA LABOUR MARKET VS TENNANT CREEK LABOUR MARKET

The socio-economic indicators, particularly in relation to the labour market indicate that the Mount Isa labour market, due to its size and depth, will over shadow the Tennant Creek labour market in terms of supply of labour for the Project.

The possible result of this is that there could be limited employment outcomes for people from the Barkly, particularly from Tennant Creek and Alpururulam (risk #58). As noted above the socio-economic indicators have revealed that this could occur. In addition, the risk that one community with a more sophisticated labour market benefits more than a community which does not have the same level of labour development, has occurred in resource sector communities in Australia. For example the north-west Western Australian town of Karratha possesses a substantially more developed workforce than the nearby community of Roebourne which has long-term socio-economic challenges. As a result, Karratha residents have greater employment opportunities from the nearby resource sector projects than Roebourne.

Jemena will address this risk through the implementation of its Regional Employment Plan (see 9.13.3), including the following:

- Project Ready Training Program
- NGP Jobs Portal
- Tennant Creek Social Enterprise opportunity.

The Project Ready Training Program will be run in both the east and the west of the Project area so Jemena will seek to ensure that people from Alpururulam are engaged in the eastern program and that people from Tennant Creek and surrounds are engaged in the western program. The delivery of this program in both of these communities seeks to mitigate the above risk by providing training to people that might otherwise not be ready to work on the Project, compared with a greater number of 'project ready' residents in Mount Isa. The Mount Isa Project Ready Training Program will focus on the relevant people from Mount Isa, Camooweal and particularly Alpururulam.

In addition, the contractual provisions for subcontractors require maximisation of the use of labour from both the Barkly and Mount Isa regions, so this means all suppliers, including those from Mount Isa, will be required to demonstrate how they intend to achieve this.

The NGP Jobs Portal (see 9.13.3.1) will also be able to track the residential location of those individuals who nominate for employment and the local content contractual provisions will be able to track actual employment outcomes. These actions result in the post-mitigation risk being assessed as **MODERATE**.

### 9.12.6 WORKFORCE ACCOMMODATION MANAGEMENT IN TENNANT CREEK

As discussed above Jemena has determined that it will establish a construction camp at the PCCS to cater for the majority of PCCS construction workers. Workers who will be accommodated in Tennant Creek will be those working at the pipe laydown yard and in management and administration. It is expected that for the period May – December 2017 there will be a constant demand for between 30 and 65 rooms per night in commercial accommodation in Tennant Creek.

Jemena has adopted this approach to strike the right balance between ensuring commercial benefits to the Tennant Creek local economy while also ensuring that any negative social impact on the health and safety of the community is avoided.

In adopting this approach Jemena is able to positively manage the following economic risks:

- The risk of existing commercial accommodation providers missing out completely in the event that Jemena established and operated its own workers camp in Tennant Creek or had all of the workers staying at the PCCS Construction Camp (risk #59 and 62).
- The risk of the Project significantly affecting the local economy through the displacement of other accommodation demand, resulting in a negative impact on other industries and services in the town, e.g. tourism, government services, other industry, particularly during times of significant annual events that bring revenue to the town, e.g. the Tennant Creek Annual Show (risk #61).

These above three risks were assessed as **HIGH** before mitigations based on the assumption that an imbalanced accommodation strategy would have a noticeable negative impact on Tennant Creek in the form of disparity of distribution of economic benefits from accommodating the workforce and a significantly negative impact on the other parts of the local economy. As the above mitigations have been successfully implemented in other communities in Australia the residual risk post mitigation has been assessed as **LOW**.

- The risk of the Project causing a spike in demand for local utilities occurs, e.g. power, water, sewage and waste disposal, outside of existing capacity resulting in a requirement for short term utilities infrastructure investment (risk #60), in the event that Jemena established and operated its own workers camp in Tennant Creek.
- The risk of the Project causing unnecessary increases in the price of and reduction in the availability of private accommodation in Tennant Creek causing a subsequent increase in the cost of living in the situation where workers seek private accommodation in Tennant Creek (risk #63).

Given the tight rental market in Tennant Creek, risk #63 was assessed as **MODERATE** prior to mitigation. The residual risk ranking of **LOW** was based on the mitigation of using a work camp to accommodate the compressor station construction workforce, and the small number (six) operational workforce that are expected to be readily absorbed by the housing market.

#### 9.12.7 AGRICULTURAL PRODUCTIVITY AND EXISTING LAND USE

In discussions with the pastoral industry Jemena identified that there was a potential risk to agricultural productivity, through the costs associated with pasture reduction from weed spread and associated cost of remediation (risk #68). Jemena will mitigate these risks through its Weed Management Plan as set out in Chapter 6.

An associated risk identified was the potential for interruptions/disruptions to mustering and other station activities during construction activities, e.g. use of station roads, pipeline installation etc. (#70). Assessed as a **MODERATE** risk prior to mitigation due to the potential for short-term disruptions, the mitigation of liaising with pastoralists to coordinate Project construction with mustering activities gives a post mitigation risk ranking of **LOW**.

A further potential risk identified was that in times of dry conditions there might be limited water available for Project construction and that the Project water demand might drain existing sources causes water shortages for existing land users. Jemena will manage this risk in accordance with the mitigation set out in Chapter 7.

#### 9.12.8 GAS SUPPLY TO REMOTE COMMUNITIES

Often when high pressure gas pipelines are proposed to be installed in proximity to remote communities there is an expectation that is created which gives the impression that gas could be supplied to small

remote communities for either power generation or for domestic use (risk #73). Indeed, the Northern Territory Government sought bidders for the Project to give some consideration to the potential for gas supply to remote communities, in the earlier parts of the competitive process. The perception that this could occur is common across all sectors of society, particularly where there is little knowledge of the gas industry and the requirements involved in such supply. Consequently, the inherent risk that this perception will occur was assessed as **MODERATE**.

People rightly see the advantages and convenience of having “town gas” reticulated in their communities given the cost and inconvenience of managing bottled LPG. The practical and economic feasibility of gas supply to such communities is not often considered, particularly the cost providing the associated infrastructure required, e.g. the pressure reduction equipment required, a pipeline from the mainline and in the case of domestic use, the processing required to treat (e.g. mercaptan treatment) and distribute domestic household gas.

In the Northern Territory, the responsibility for the provision of power to remote communities rests with the Power and Water Corporation (PWC) and so in any event, it would be a capital investment decision to be made by PWC. It is noted that the largest Aboriginal community within any proximity to the Project is Alpururulam, with a population of approximately 432 and so gas supply to this community would unlikely be feasible.

Jemena will seek to address this perception, after consultation with PWC, during the introduction to the SIA consultations.

On the assumption that communities are provided with and understand the explanations about the requirements necessary for gas supply to occur, the residual risk after such mitigation is assessed as **LOW**.



### 9.13 SOCIAL AND ECONOMIC OPPORTUNITY

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The assessment of social and economic opportunity arising from the NGP Project is based on a standard risk assessment framework but in this case measures the Likelihood (of achievement of the opportunity within existing community capacity) versus Consequence (the extent of community benefit arising from the opportunity). The resultant risk level provides a measure of the level of positive social and economic impact to the community as a whole.

Social and economic opportunity is analysed in the three categories of:

- Culture and Heritage
- Community Social Health and Well-being
- Economy and Development.

Likelihood and consequences associated with each opportunity were rated according to the criteria provided in Table 9-6.

Table 9-6. Social and Economic Opportunity Matrix

CONSEQUENCE	LIKELIHOOD					
	Insignificant - A	Small - B	Medium - C	Large - D	Major - E	
<b>Social &amp; Economic</b>	Limited or no local benefit accrual. Very few jobs and very little contracts. Very little economic contribution.	Benefit accrual only to those with existing skill and capacity. Small number of jobs and few small scale contracts. Minor contribution to the local economy.	Benefit accrual to all those with existing capacity who choose to participate. Jobs to most of those who want them. A number of contracts let locally. A solid contribution to the local economy.	Broad benefit accrual across the community. Significant number of local people employed. Significant number of contracts let locally. Significant contribution to the local economy.	Significant scale positive change in the community through opportunities directly and indirectly associated with the project. Many local people employed in the long term. Many long term contracts let locally. Significant legacy benefit.	
<b>Almost Certain - 5</b>	Low	Moderate	Significant	High	Transformational	
<b>Likely - 4</b>	Low	Moderate	Significant	High	Transformational	
<b>Possible - 3</b>	Low	Moderate	Significant	High	Transformational	
<b>Unlikely - 2</b>	Low	Low	Moderate	Significant	High	
<b>Highly Unlikely - 1</b>	Low	Low	Moderate	Significant	High	

OPPORTUNITY IMPACT LEVEL	OPPORTUNITY MANAGEMENT ACTIONS
TRANSFORMATIONAL	Requires significant commitment and change leadership at the highest levels of the organisation over the life of the project. Suits major, long term projects with a high impact / proximity to local community.
HIGH	Requires a committed, focused and planned approach in a close and cooperative working relationship with the community.
SIGNIFICANT	Requires a committed, focused and planned approach in a close and cooperative working relationship with the community.
MODERATE	Positive social and economic outcomes are likely achievable through a reasonable level of commitment and planning.
LOW	"Business as usual" - should be achievable through implementing existing policies and procedures, would occur within existing market forces, but should be reviewed within regular project schedules.

### 9.13.1 OPPORTUNITY ASSESSMENT, ENHANCEMENT AND SOCIAL INVESTMENT

The outcomes of the opportunity assessment undertaken to date are documented in the Social and Economic Opportunities Register appendix to the SIA Scoping Study (Appendix R). The opportunities assessment draws on the analysis provided in the SIA Scoping Study and the Economic Impact Analysis (Appendix S). The opportunities for the Northern Territory identified across each Project phase are listed below from the register.

#### Planning phase

- Discovery of previously unknown cultural heritage site, artefact or objects adding to the body of knowledge in the Territory Heritage Register.
- Passing on of knowledge between generations through cultural heritage field surveys.
- Aboriginal Field Hands learn how to undertake site recording of archaeological sites.

#### Construction phase

- Traditional Owners and Aboriginal Field Hands learn about Health, Safety & Environment practices in the work place.
- Project logistics design provides an opportunity for arrangements to be established between Jemena and local PFES that capture synergies between the Project for the benefit of the relevant community.
- Local people get employment opportunities
  - Employment of people from Tennant Creek in unskilled and semi-skilled project jobs.
  - Employment of people from Tennant Creek in skilled and highly skilled project jobs.
- Local businesses win contracts through competitive supply.
  - Local businesses have the opportunity to compete for business contracts with the project.
  - Increased local demand for goods and services to support Project construction activities.
- Local accommodation providers gain business from the project.
- Practical management of known cultural heritage sites and discovery of previously unknown cultural heritage sites, artefacts or objects adding to the body of knowledge in the Territory Heritage Register.
- Passing on of knowledge between generations through CHMP implementation.
- Aboriginal Field Hands learn how to undertake site recording of cultural heritage sites.
- Project non-Aboriginal staff gain greater awareness and respect for Aboriginal cultural knowledge resulting in greater acceptance of Aboriginal people working on the project
- Traditional Owners and Native Title Holders / Claimants receive a range of benefits from the land agreements.
- Installation of new access tracks, upgrade of existing tracks and installation of new water bores and dams.

### Operational phase

- Local businesses have the opportunity to compete for business contracts with the Project.
- Local long term employment in skilled pipeline and compressor station operations jobs in Tennant Creek.
- Incremental but sustained contribution to the local economy.

The Social and Economic Opportunities Register provides a guide to Jemena as to how opportunity should be managed within the context of the Project, e.g. where management focus should be applied and where social investment should be best directed. Opportunities and risks will be further refined through the SIA consultations.

The relationship between the assessment of an opportunity, the level of opportunity enhancement applied and the level of social investment that a project proponent should contemplate is situational. That is, while there is no direct correlation between the nexus of community capacity to respond to an opportunity and the breadth and depth of community benefit, the resulting assessment can give guide to a project proponent as to what they wish to do to enhance opportunities, e.g. through local (and social) employment and procurement initiatives and also how much they wish to invest to realise a higher level of community benefit, given the nature of the project in question.

For example, if a community can almost certainly capture the opportunities on offer within its existing capacity but there are no or few opportunities made available then the outcomes will be low. If, on the other hand if the community is highly unlikely to capture the opportunities on offer but the project proponent elects to put in place robust local employment and procurement initiatives, and a significant level of social investment, then the outcomes may well be high, or even transformational for a community.

The consideration of the above needs to take into account the nature of the Project and the practicality of what can be achieved. All of the opportunities identified and associated measures to maximise those opportunities will be included in the ESIMP as discussed in Section 9.14.

## 9.14 MITIGATION AND MANAGEMENT

This section combines all of the risks and opportunities that have been identified to date into the primary elements that comprise Jemena's Economic & Social Impact Management Plan (ESIMP). The ESIMP incorporates the elements of Jemena's Industry Participation Plan (IPP) that was submitted to the Northern Territory Government as part of the competitive bid process for the NGP.

The ESIMP is designed primarily to address the ESIA categories of:

- community social health and well-being
- economy and development.

The ESIMP address impacts and opportunities across the planning, construction and operations phases of the NGP. Risks and opportunities associated with culture and heritage are mainly dealt with in Chapter 8 of the EIS and managed through the Cultural Heritage Management Plan (CHMP) (Appendix Q). However, where culture and heritage opportunities relate also to the social health and well-being or the economy and development aspects, these are captured in the relevant sections below.

The mitigation or enhancement initiatives set out below address those risks with a moderate or higher inherent level of risk and those opportunities with a moderate or higher level of overall community benefit. With the proposed mitigation plans in place all residual risks are either low or moderate.

This section sets out the opportunity enhancement activities Jemena will incorporate into its ESIMP and which will contribute to the above-mentioned risk management to ensure that as much as reasonably practicable, the opportunities arising from the Project, particularly for the regions, can be realised.

### 9.14.1 PROJECT COMMUNICATIONS

Many of the risks in both the planning and construction phases relate to communications about the Project by Jemena and its Construction Contractor. In particular, during the Planning Phase, individual concern and anxiety may arise in the community from uncertainties about the Project and a lack of available information, including about opportunities for economic benefits, impacts on the environment and so on.

Some of these risks can be addressed by good and constructive communication. Jemena's primary method of ensuring such communication will be through the establishment of Community Reference Groups (CRG) at both Tennant Creek and Mount Isa that will include representatives from the relevant stakeholder organisations in those towns.

It is through these CRGs that a two way flow of information and advice will occur and so will allow for early warning that management and mitigation measures are not achieving the outcomes and benefits desired. The CRG will meet on a monthly basis throughout the construction phase and for the first three months after commencement of operations.

In addition, Jemena has established a freecall number – 1300 578 515 – for complaints to be registered and inquiries to be made. Any complaints logged will be directly referred to the responsible person and also logged in internal monthly Project reporting to senior management.

Complaints that are lodged and plans for their resolution will be referred back through the CRG for discussion and advice to be provided.

In addition to the above Jemena will provide communications at relevant points of gathering, e.g. roadhouses, for the provision of information to tourists and other travellers.



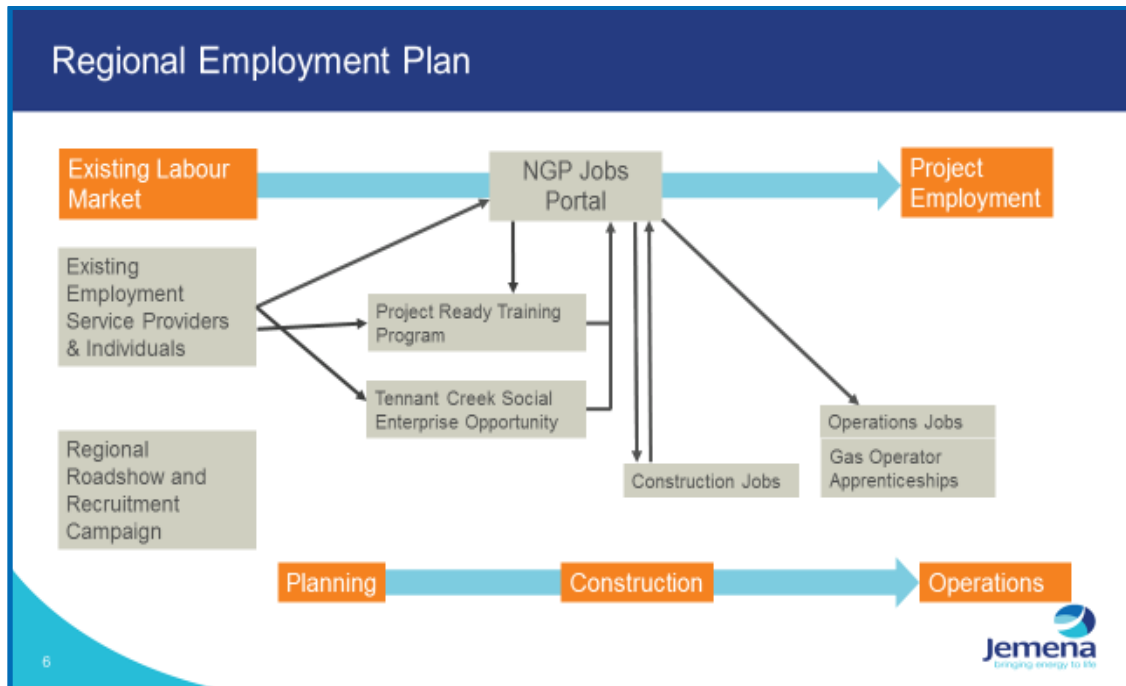
The activities above are designed to specifically address risk # 6, 10, 11, 27, 36, 47, 50, 51, 52, 53, 70, 78 and any other risks or opportunities that might arise through the Project implementation.

#### 9.14.2 EMPLOYMENT AND TRAINING

There are employment and training opportunities throughout all phases of the Project for local and Indigenous people from the Barkly and Mount Isa regions, the Territory more broadly and western Queensland. The approach that Jemena has taken is to adopt a model that provides for employment and training opportunities at several levels; those people who would like to work on the Project and who:

- **would be able to be employed directly from the existing labour market** as they would be competitive based on their existing skill set;
- **would not quite be able to be employed directly from the existing labour market** as their skill set is lacking in one or more areas, but that with an intensive period of pre-employment training, i.e. through a Project Ready Training Program (see further below), could be competitive employment candidates; and,
- **would be unlikely to be able to be employed directly from the existing labour market** as they would not be competitive based on their existing skill set, as they face significant barriers to employment generally. They may be able to be employed in a less demanding environment such as the proposed Tennant Creek Social Enterprise Opportunity.

The employment and training model that caters for each of the above is shown in Figure 9-9.



**Figure 9-9. NGP employment and training model**

### 9.14.3 REGIONAL EMPLOYMENT PLAN

The Regional Employment Plan model shows how each of the levels of employment candidates can access employment and / or training opportunities on the Project, which is as follows:

1. Direct employment through existing service providers and through individuals registering on the NGP Jobs Portal is targeted to those who would be competitive based on their existing skill set, both Aboriginal and non-Aboriginal from the Barkly and Mount Isa regions, the Territory more broadly and western Queensland.
2. Access to the Project Ready Training Program is targeted toward local Aboriginal people from the Barkly and Mount Isa regions who would not quite be able to be employed directly from the existing labour market as their skill set is lacking in one or more areas, but could become competitive employment candidates.
3. The Tennant Creek Social Enterprise Opportunity is targeted specifically toward Aboriginal people in Tennant Creek who would be unlikely to be able to secure employment on the project as they face significant barriers to employment generally.

The following sections describe the initiatives that comprise the Regional Employment Plan in more detail, as does the framework ESIMP.

#### 9.14.3.1 Regional Recruitment Strategy

The primary mechanism for people from the Barkly and Mount Isa regions, the Territory more broadly and western Queensland to seek employment on the Project will be the NGP Jobs Portal.

The NGP Jobs Portal will be the central place where people can register for employment on the Project. It will be a web-based portal that all vacancies for employment will be posted by Jemena, the main Construction Contractor and other contractors.

The NGP Jobs portal will be established in the third quarter of 2016.

Communications about the NGP Jobs Portal will be placed in Northern Territory and regional newspapers in the third and fourth quarters of 2016 and included in information provided through the CRG.

Also during the third and fourth quarters of 2016 Jemena and the Construction Contractor will hold briefing sessions in Tennant Creek and Mount Isa, in conjunction with relevant community organisations to explain to prospective employees what job opportunities will be available on the project and how to go about applying for them.

### NGP Jobs Portal

The NGP Jobs Portal will bring together labour market supply and demand through the following functionalities.

Labour market supply:

- the registration of job seekers, information required will include contact details (including place of residence), skills, work experience, qualifications, licences, resume (upload), Aboriginality and associated language group, referees and, if applicable the employment service provider representing the job seeker.
- automatic notification from the NGP Jobs Portal to Jemena and NGP Project contractors of job seeker registration on the portal.

Labour market demand:

- the posting of NGP Project employment vacancies on the NGP Jobs Portal by Jemena and Project contractors.
- automatic notification from the NGP Jobs Portal of employment vacancies to nominated employment service providers and labour hire companies in Tennant Creek, Mount Isa and the regions in which the NGP will be constructed and operate.
- automatic notification from the NGP Jobs Portal of employment vacancies to job seekers registered on the portal and particularly to those job seekers with the skills and experience required for the advertised vacancy.

The NGP Jobs Portal will also interface with existing NGP Project employer online recruitment portals, e.g. McConnell Dowell pipeline jobs portal (<http://www.mcconnelldowell.com/>) and will also provide links to external websites that can provide both job seekers and employers with information about employment subsidies, government support programs and other useful information.

#### 9.14.3.2 Project Ready Training Program

The Project Ready Training Program will be designed to prepare local and Aboriginal people living in the Barkly and Mount Isa regions who are strongly motivated to work on the Project for unskilled and semi-skilled construction jobs, particularly those who are long term unemployed.

The PRTP contemplates the implementation of four PRTPs, each program catering for 15 trainees, so a total of 60 people across the two regions. The programs will be run in each region in the fourth quarter of 2016 and the first quarter of 2017.

The PRTP will provide the essential and desirable skills that graduates will be required to hold for consideration for employment and will include modules such as the Construction Industry White Card (CPCCOHS1001A) or equivalent following Work Health Safety policies and procedures, basic first aid, workplace communications, literacy and numeracy, income management, drivers licences, using power tools and dogging and rigging skills.

In the second quarter of 2016 Jemena sought expressions of interest from the market for the provision of the PRTP. Graduates from the PRTP will be automatically entered into the NGP Jobs Portal as highly recommended candidates.

#### 9.14.3.3 Gas operator apprenticeships

In the second half of 2018 Jemena will select a group of the best local and Aboriginal employees that have worked on the Project, who have performed well and have demonstrated the capability, aptitude and attitude, to be able to undertake the Jemena Gas Operator Traineeship Program.

The program will be undertaken in two phases:

- Phase I: The group selected will undertake a Certificate II in Gas Operations which will occur over a 5-6 week period and will include a mix of classroom and field work, based on the availability of suitable practice areas. The program will also include a period at Jemena's gas learning and operations centre at Greystanes in Sydney or at another suitable facility. The program will include further vocational based literacy and numeracy training and life skills coaching. Successful participants will receive a Certificate II in Gas Operations.
- Phase II: Following Phase I, Jemena will select two candidates for employment in the operations phase who will undertake a Certificate III in Gas Operations. Graduates from this phase will acquire the skills to operate and maintain a pipeline. While the operations requirements for the NGP will require few staff, those graduates from Phase I of the program will make very strong graduates for further training and employment opportunities in the industry.

#### 9.14.3.4 Tennant Creek social enterprise opportunity

During the initial development of its approach to local content Jemena proposed the establishment of a social enterprise in Tennant Creek that would see the production and supply of wooden pipe skids and sand or saw dust bags in Tennant Creek.

The purpose of the enterprise was to ensure that there were employment opportunities for people in Tennant Creek who would otherwise not likely be able to obtain work directly on the Project. It is often the case that people face a variety of significant barriers to employment, e.g. through long term unemployment, cultural and family responsibilities and other social and health issues.

Post the competitive process and after further consultation with key stakeholders in the community Jemena determined that the establishment of a new entity in Tennant Creek would not be an optimal solution. This is because the Tennant Creek community has within its existing business and community capacity, the ability to provide the products required and at the same time achieve the original social outcomes intended.

The Project Construction Contractor has confirmed that there will be a requirement for 50,000 timber pipe skids and 80,000 sand or sawdust bags.

In the second quarter 2016 Jemena sought expressions of interest from the Tennant Creek business and broader community with the intention that once these are received then requests for tender will be issued and assessed in the third quarter 2016. Tenderers will be required to specifically demonstrate how they intend to achieve significant social outcomes for Tennant Creek Aboriginal people.

The contract for the manufacture and supply of the pipe skids and sand or sawdust bags in Tennant Creek is expected to be awarded in the third quarter of 2016. Supply will need to commence by 31 January 2017.

#### 9.14.4 BUSINESS OPPORTUNITIES

There are business opportunities throughout all phases of the Project for local and Indigenous people from the Barkly and Mount Isa regions, the Northern Territory more broadly and western Queensland. The ESIMP for the Project seeks to maximise these opportunities through a number of strategies and initiatives that are described below.

##### 9.14.4.1 Local content implementation

Implementation of strategies and initiatives to maximise local business contracting opportunities from the Project commenced shortly after Project award in late 2015.

Jemena and the Construction Contractor have incorporated local content contractual provisions in contracts (where applicable) to ensure that subcontractors maximise opportunities for local business and people. These conditions include requirements for sub-contractors to implement and report on Local Content Plans which detail employment, sub-contracting and training commitments focusing on the Barkly and Mount Isa regions, and the Northern Territory more broadly and western Queensland, including Indigenous business and employment opportunities.

Both Jemena and the Construction Contractor have engaged the Industry Capability Network (ICN) to support local vendor screening, communicate tendering opportunities and other relevant Project information. This includes posting specific tender opportunities on the ICN Gateway system and providing information such as a summary of the scope of work, expectations for delivery, pre-qualification requirements and other relevant information. Jemena will also post selected opportunities to the Tenderlink system.

The dedicated Jemena ICN Gateway page is at:

<https://gateway.icn.org.au/project/3680/northern-gas-pipeline-ngp-previously-negi>

The Jemena Tenderlink page is at:

<https://www.tenderlink.com/jemena/>

The dedicated Construction Contractor ICN Gateway page is at:

<https://gateway.icn.org.au/project/3767/northern-gas-pipeline-construction>

Jemena is also actively pursuing opportunities to break work packages into smaller components to facilitate generating local content outcomes. Known as 'package splitting' this can result in separate scopes of work suitable for local suppliers being created from a larger 'package'.

Through these initiatives and those described in section 9.13.4 above, and by engaging with key stakeholders, Jemena is working to ensure that local business, particularly those in the Barkly and Mount Isa region can be competitive in tendering for work on the Project and thus provide opportunities for businesses to expand or new businesses to develop through working on the Project.

To deliver the initiatives described above Jemena has appointed staff dedicated to implementing the ESIMP and has established a project office in Darwin to support stakeholder engagement and ESIMP implementation.

#### 9.14.4.2 SME Business Growth Program

The SME Business Growth Program has been established specifically to support SMEs to maximise potential opportunities from the Project.

##### SME Business Briefings

Since Jemena was awarded the Project it has engaged with in excess of 400 businesses in Darwin, Katherine, Tennant Creek, Alice Springs and Mount Isa to communicate information about the Project.

These briefings have provided opportunities for local businesses to engage with Project personnel to better understand contracting and procurement timelines and processes, pre-qualification requirements as well as engage officers from the ICN and State/Territory and Commonwealth Governments.

Further direct and indirect engagement with SMEs in and around the Project area will continue with the goal of supporting local business and employment outcomes.

Importantly, this ongoing engagement program will also facilitate communications to business people and the broader community in the event of forced or unpredicted Project delays.

##### SME Business Investment Fund

This initiative, which has commenced operation, is available to facilitate eligible SMEs in accessing government business development programs relevant to their individual needs through Jemena providing co-contribution funding.

A Memorandum of Understanding (MoU) was signed with the Northern Territory Government in June 2016 for the Northern Territory funded business programs and arrangements and collaborations are in progress with the Commonwealth and Queensland Governments.

Through Jemena's co-contribution it is envisaged that this will support not only capability to competitively tender for work on the project but also longer term business capacity for local SMEs particularly in the Barkly and Mount Isa regions.

Jemena is working with key business and government stakeholders to implement this initiative.

Jemena is reporting regularly to the Northern Territory Government on the implementation of these employment and business initiatives.

#### 9.14.5 REMOTE COMMUNITY DEVELOPMENT

##### 9.14.5.1 Social Investment Program

During the fourth quarter of 2016 and the first quarter of 2017 Jemena will develop a Remote Community Social Investment Program.

The program will be designed after the SIA consultations have been completed and the Project approvals are in place and will be the subject of further consultations with the relevant community organisations. Opportunities exist for social investments to include appropriate forms of technology that would support a



community's development on a broad basis, for example, the support of local clinics through telehealth technology, or local schools.

Jemena's Remote Community Social Investment Program will commence in the construction phase and continue throughout the operations phase.

#### 9.14.5.2 Economic development

During the fourth quarter of 2016 and the first quarter of 2017 Jemena intends to undertake a high level study on economic opportunities for remote communities, outside of the Project.

### 9.15 SUMMARY AND RESIDUAL RISK

The NGP Project will involve activities which do have the potential to impact the socio-economic profile of the region. Many of these impacts are positive; however, some are negative and will require ongoing mitigation, management and monitoring. Each identified risk has been reduced to As Low As Reasonably Practicable (ALARP) through the application of management and mitigation measures. The mitigation measures prescribed in this chapter are expected to reduce most risks to low; however, there are some risks that have a Moderate level of residual risk.

The residual risk profile for the socio-economic risks is shown below in Table 9-7 below.

**Table 9-7. Residual socio-economic risk profile**

PROJECT PHASE	NUMBER OF RESIDUAL RISKS				
	Low	Moderate	Significant	High	Extreme
PLANNING	8	1	0	0	0
CONSTRUCTION	42	9	0	0	0
OPERATIONS	5	2	0	0	0

#### 9.15.1 PLANNING PHASE RESIDUAL RISKS AND CURRENT OPPORTUNITIES

The Project is currently in the planning phase and as such impacts are already being realised. These impacts include increased economic activity in the form of local business engagement and local people working on early survey activities, while potential negative impacts related to land access negotiations are being carefully managed through established processes.

Social impact consultations are being undertaken in August 2016; overall impact profile will be ground tested and then any learnings will be incorporated into mitigation and enhancement plans through the development of the ESIA and ESIMP, which are expected to be finalised and submitted with the Supplementary EIS.

Post mitigation, the planning phase residual risks are assessed as low, however, as noted above, careful ongoing management and mitigation will be important in ensuring the risks continue to be effectively managed.

### 9.15.2 CONSTRUCTION PHASE RESIDUAL RISKS AND OPPORTUNITIES

The construction phase will lead to an increase in activity throughout the region and in particular, the geographical area of potential social impact shown in Figure 9-2. After mitigation, the risks that remain moderate during the construction phase relate to three particular areas as follows:

- The impact of increased wages and benefits circulating in the community causing an increased incidence in the use of alcohol and drugs, which in turn can result in increased anti-social behaviour/negative interaction with the health and criminal justice system. Jemena will continually seek to mitigate this risk through the various strategies outlined in the risk register and ESIMP.
- The risk of increased traffic incidents in Tennant Creek, and along the Barkly and Stuart Highways. This risk is further discussed in Chapter 10 Human Health and Safety.
- From an economic perspective, there will remain the risk that local people and businesses are not successful in obtaining jobs and contracts, that the Barkly labour market and business capacity is overshadowed by the much larger Mount Isa capacity and that the Project labour demand drains skilled workers from existing industries, including the pastoral industry, tourism, local government and other local businesses.

Jemena will seek to obviate or mitigate these impacts through the implementation of the various capacity building programs, transparent implementation of its Regional Employment Plan, promotion of the SME Business Investment Fund and clear communication about labour demand through the proposed CRG. Fundamentally, however, Jemena cannot control the market, nor the choices of individual people and businesses, their desire and ability to be competitive.

### 9.15.3 OPERATIONAL PHASE RESIDUAL RISKS AND OPPORTUNITIES

During the operations phase there will be considerably reduced Project activity and consequently risks during this phase are all Low. A small suite of long term business and employment opportunities will be available during the 30+ year operating phase. Jemena will seek to maximise the use of local goods, services and labour during this period.

