

12. Socio-economics

12.1 Introduction

An Economic and Social Impact Assessment (ESIA) was undertaken to identify the positive and negative social and economic consequences arising from Mount Peake Project activities and propose measures to enhance the positive impacts and avoid/minimise the negative impacts on local and regional communities. The methodology was developed based on the following:

- ▶ Terms of Reference for the Preparation of an Environmental Impact Statement: Mount Peake Project (NT EPA 2014);
- ▶ Guidelines for the Preparation of an Economic and Social Impact Assessment (NT EPA 2013); and
- ▶ International Principles for Social Impact Assessment (IAIA 2003).

The full ESIA report can be found in Appendix L.

12.1.1 Project Overview

Project operations

The mine site will be located approximately 235 km north-northwest of Alice Springs and approximately 50 km west of the Stuart Highway. Mining will occur at a rate of up to 8.4 million tonnes per annum (Mtpa). Ore processing involves crushing, grinding and magnetic separation to produce up to 1.8 Mtpa of concentrate annually.

Concentrate will be trucked via the access road to a new rail siding and loadout facility at Adnera. Road trains used to transport the concentrate will be highway compliant and will operate under shared usage conditions with other highway compliant vehicles such as delivery trucks, busses and light vehicles. An underpass of Stuart Highway will be constructed to separate road trains from Stuart Highway traffic.

Trucks will dump concentrate to a stockpile adjacent to the rail siding for loading in to rail wagons. Around one train movement per day is expected.

A borefield will be established within the alluvial aquifer of the Hanson River to provide water for mining, processing, dust suppression and potable use.

The life of mine is expected to be 19 years, including construction (2 years), mining (15 years) and closure (2 years).

Workforce

The construction and operations workforces are estimated to peak at 225 and 170 personnel respectively. The workforces will be largely fly-in fly-out due to low population numbers in the local area. Workers will fly to Ti Tree and then bus to a self-contained accommodation village located approximately 5 km east of the mine for the duration of their roster.

The village will comprise:

- ▶ dry mess, wet mess, kitchen and cold room;
- ▶ ablutions;
- ▶ games room complete with internet and telephone connection;
- ▶ swimming pool, tennis court and gymnasium;



- ▶ laundry facilities;
- ▶ fire water protection with diesel backup;
- ▶ sewage treatment plant;
- ▶ village administration offices; and
- ▶ car parking.

First aid facilities for the workforce will be provided at site.

Upgrade of Ti Tree airstrip

The Project is expected to use the existing Ti Tree airstrip, 70 km from the mine site. Negotiations with the Northern Territory Government on this facility are in progress and an upgrade of the current airstrip is anticipated to be covered by the Federal Government's Development Fund for Northern Australia.

The runway will be upgraded by increasing the width and length of seal. A concept for a small terminal has also been prepared (Figure 12-1) which would include check-in desks, baggage collection, amenities, car parking, undercover seated areas and baggage collection area.



Figure 12-1 Concept schematic for the new Ti Tree terminal

12.1.2 ESIA methodology

The key steps in the methodology included:

- ▶ identification of the social study area, where the local study area was considered to be the area under the Project footprint, the regional study area included the Central Desert Shire and the key localities of Ti Tree, Wilora, Stirling Station and Anningie Station, and the wider area of social influence from where the Project would attract some of the workforce and goods and services was considered to be Alice Springs and Darwin;
- ▶ preliminary scoping of social issues in the study area and those likely to arise from the Project;
- ▶ establishing a social baseline for the study area against which the impacts would be measured. It included a detailed description of the socio-economic characteristics of the study area communities. Data and information was gathered from various sources including:

- Australian Bureau of Statistics (ABS) Census 2011 data;
 - websites and publications of local governments in the regional study area, territory agencies covering health, education, housing, communities and emergency services;
 - real estate websites;
 - media reports; and
 - stakeholder consultation undertaken in March 2015.
- ▶ identification and assessment of social and economic impacts that may be generated from Project construction and operation activities; and
 - ▶ recommendation of management strategies to avoid/minimise negative impacts and enhance the positive benefits.

12.1.3 Stakeholder consultation

Stakeholder consultation was undertaken in March 2015. Stakeholders consulted and the issues raised are outlined in Chapter 6.

12.2 Regional Social Baseline

12.2.1 Overview of the Regional Study Area

The social baseline describes community characteristics of the regional study area including Central Desert LGA with a focus on key communities closest to the Project area. These communities are Ti Tree State Suburb (SSC) (located approximately 52 km from the Project area) and Wilora Indigenous Location (ILOC) (located approximately 47 km from the Project area). The social baseline makes references to the wider area of influence such as Alice Springs and Darwin where required.

The Central Desert LGA covers an area of approximately 282,000 square kilometres (Central Desert Regional Council 2015). The Council area spans from the Western Australian border to the Queensland border and has nine major communities - Atitjere (Harts Range), Engawala, Lajamanu, Laramba, Nyirripi, Ti Tree, Yuelamu, Yuendumu and Willowra with a number of occupied outstations.

Ti Tree is a small community located on the Stuart Highway about 194 km north of Alice Springs (Central Desert Regional Council 2015). Ti Tree is identified in the Regional Council Plan (2015) as a service delivery centre. The Council office is located in Ti Tree town and services Ti Tree and the communities of Pmara Jutunta, 6 Mile, Alyuen and Wilora, collectively referred to as Anmatjere (Central Desert Regional Council 2015). Wilora ILOC is an Aboriginal community located 245 km north of Alice Springs.

The Mount Peak Project is predominantly located on Stirling Station and a small portion of the adjacent Anningie Station where the access road alignment may be located. Stirling Station and Anningie Station are both cattle stations. Both stations are identified as outstations and pastoral properties in the regional council plan (Central Desert Regional Council 2015a).



12.2.2 Community Characteristics

Population, age and gender

The estimated resident population of Central Desert LGA was 4,331 persons in 2014 (Central Desert Regional Council 2015a) and Ti Tree and Wilora were 143 persons and 129 persons respectively. During census 2011 the total population for the same areas was 3,720 persons in Central Desert LGA, 123 persons in Ti Tree SSC and 111 persons in Wilora ILOC (ABS 2011b, c, d). Population figures indicate an increase in population in the regional study areas from 2011 to 2014. The majority of the population in the regional study area is Indigenous (80% in Central Desert LGA, 50% in Ti Tree and 100% in Wilora).

The age profile of the study area was characterised by the following features (ABS 2011a, e, f):

- ▶ the median age in Ti Tree was 39 years, 26 years in Wilora and 27 years in Central Desert (23 years for the Indigenous population and 40 years for the non-Indigenous population) (ABS 2011, c, d);
- ▶ the largest percentage of the population was in the 25 - 44 year age group for all locations;
- ▶ for all locations the smallest percentage of the population was in the 65 years and over category; and
- ▶ Wilora and Central Desert had similar age profiles, while Ti Tree had a considerably larger proportion of the population in the 45 - 64 years age bracket. This contributed to the higher median age of 39 years in Ti Tree.

Family composition and housing

The family composition and household structure helps to understand the social fabric of the community. According to the Census 2011 data, 'couple family with children' was the dominant group in all locations accounting for 44.4% in Ti Tree SSC, 47.6% in Wilora ILOC, and 61.8% in Central Desert LGA (ABS 2011a, e, f). The proportion of 'couple family without children' and 'one-parent family' was equal in Ti Tree and Wilora. In Central Desert LGA, 'one-parent family' was more dominant than 'couple family without children'.

Average household numbers ranged from 2.5 people per household in Ti Tree to 4.3 in Central Desert and 4.4 in Wilora (ABS 2011a, e, f).

The study area had a high proportion of rented housing (with 68% in Ti Tree and 100% in Wilora) and a high proportion of unoccupied dwellings (18.0% in Ti Tree) (ABS 2011c, d).

Labour force, employment and unemployment

Unemployment data shows 14.5% unemployment in Central Desert LGA as a whole (with 26.3% unemployment among the Indigenous population) (ABS 2011b). Unemployment in Wilora ILOC was 35.7% and no unemployment was reported in Ti Tree SSC (ABS 2011c, d).

According to ABS statistics for Central Desert, there were a total of 20 businesses in 2011. Of these, eight had 5 or more employees, four had 1 to 4 employees and eight were non-employing businesses.

The main industries of employment in Ti Tree SSC in 2011 were public administration and safety with 38.8% (22 persons) and retail trade with 32.3% (21 persons) (ABS 2011g). There were 13 industries that did not contribute to the Ti Tree industry profile. Public administration and safety was also the dominant industry of employment in Central Desert LGA with 28.3% (276 persons) (ABS 2011e). This was followed by mining with 19.6% (191 persons).



The main occupations in Ti Tree SSC were labourers with 23.8%, followed by managers, professionals, community and personal service workers, and clerical and administrative workers each having a contribution of 14.3% to the occupation profile (ABS 2011f). Central Desert LGA reported professional as the largest occupation group (17.9%), followed by labourers (16.7%), community and personal service workers (15.6 %) and technicians and trades workers (12.2%) (ABS 2011e).

Industry and occupation data for Wilora ILOC was not available.

12.2.3 Social Infrastructure

The regional study area is serviced with limited social infrastructure facilities and services. Higher order services for the region are accessed from Alice Springs and Darwin. Table 12-1 identifies social infrastructure within Ti Tree and Wilora and the wider area of influence, where applicable. This information has been drawn from Council planning and policy documents (Central Desert Regional Council 2015, 2015a) and supported by stakeholder consultation.

Table 12-1 Social infrastructure available in the region

Social infrastructure	Ti Tree SSC and Wilora ILOC (and Central Desert LGA and the wider area of influence where applicable)
Education facilities	The Council delivers a range of employment related training activities in several communities including Ti Tree and Wilora through Remote Jobs and Communities Program (RJCP). Stirling station school and pre-school. Ti Tree school and pre-school. School nutrition programs run in Wilora.
Community cultural and recreational facilities	One library in Ti Tree. Council's Youth, Sport and Recreation program's - a combination of after school, vacation care, youth, sport, recreation, art and cultural activities are delivered by the team in several communities including the Anmatjere communities of Ti Tree and Wilora and others. Several art galleries in the region.
Health and wellbeing facilities	The Council's Aged Services continue to grow and mature into a program that can meet the needs of the aged and disabled older people as identified across the communities including Ti-Tree and Wilora. Hospital in Alice Springs. Royal Flying Doctor Service. Remote health centre in Ti Tree. Family mediation and domestic violence support services in the LGA. Health centre and separate aged care centre in Wilora.
Other major facilities and services	Centrelink services in all communities in the LGA. Wilora - 2 night patrol services - a men's and a woman's. CDRC - has 9 Service Delivery centres with one located in Ti Tree. The Ti Tree police station has fire response and roadside recovery capability. The Ti Tree office of the Central Desert Regional Council has a fire vehicle. Ti Tree roadhouse and caravan park. There is one ranger located in Ti Tree.



12.2.4 Summary of Key findings

Key findings of the social baseline include:

- ▶ a large Indigenous population within the regional study area (80% in the LGA), almost 50% in Ti Tree SSC and the entire Wilora ILOC community;
- ▶ generally younger population with higher percentage between 25 - 44 years of age and communities mostly made up of 'couple families with children';
- ▶ Ti Tree SSC reported no unemployment, Central Desert LGA recorded 14.5% and a high level of unemployment was noted in Wilora (35.7%) and among the Indigenous population of Central Desert LGA (26.3%);
- ▶ public administration and safety were the key industries of employment in both Ti Tree SSC and Central Desert LGA;
- ▶ the majority of dwellings in the study area were rented and a high percentage of dwellings were unoccupied compared to the territory average; and
- ▶ basic social infrastructure is located within the communities with higher order services provided from Alice Springs.

12.3 Impact Identification and Assessment

This Section identifies, describes and assesses the potential social and economic impacts arising from Project construction and operation on the regional communities, with particular focus on stakeholders that may be directly affected by the impact. The following impacts have been assessed in this section:

- ▶ economic impacts;
- ▶ demographic changes and impacts on community values;
- ▶ impacts on housing and social infrastructure;
- ▶ impacts on property;
- ▶ amenity impacts; and
- ▶ traffic and safety impacts.

12.3.1 Economic impacts

Business opportunities

The Mount Peake Project has an estimated capital expenditure of \$310 million during construction and a total operational expenditure of \$2,000 million over the life of the Project. This will bring economic benefits to the region, territory and even nationally. It is expected that through the sourcing of goods and services the Project will generate business opportunities in the regional study area and the wider area of influence, and potentially also from Alice Springs. Where possible the Project will source goods and services from local suppliers in nearby communities, however there are limited opportunities to do so.

Employment opportunities and flow on benefits

The Project is expected to generate up to 225 construction and 170 operational jobs. The workforce will be primarily fly-in fly-out (FIFO) from Alice Springs, Darwin and potentially interstate, depending on the availability of required skills.



It is anticipated that, depending on the available skill base, a small proportion of the Project workforce may be recruited locally for activities such as environmental works (monitoring, reporting and rehabilitation), road construction, plant / machinery operation, bus drivers, camp staff and administration staff. However, stakeholder consultation has revealed that due to the small labour pool available in the regional communities recruiting local workers may be challenging.

TNG is committed to long term employment, skills training and mentoring of Aboriginal people for the Mount Peake Project. Through their Indigenous Relations Policy, TNG will maintain ongoing communication with the local Indigenous communities to optimise Project related opportunities.

It is anticipated that local and regional employment and business opportunities will generate some further demand for goods and services creating additional local jobs.

The upgrade of Ti Tree airstrip will also generate some short term employment opportunities during construction with longer term employment for staff manning the terminal.

Workforce draw from other industries

The regional communities, including Alice Springs, have a relatively small population and labour force. Stakeholder consultation identified that employment opportunities generated by potential resource projects in the region may lead to skilled workers in existing jobs taking up these opportunities, creating some workforce shortfalls in existing industries.

12.3.2 Demographic change and impacts on community values and lifestyle

The majority of the Project workforce is anticipated to be FIFO. The workers will fly to Ti Tree and then bus to the accommodation village near the mine site, for the duration of their roster. Due to the remote location of the mine site and the self-contained nature of the accommodation village, it is highly unlikely that the workers will visit Ti Tree or other regional centres during their roster. Due to the minimal potential for workers to interact with the local communities, the Project will not change local demographics and is unlikely to impact on local community values and lifestyle.

12.3.3 Impacts on housing and social infrastructure

Impacts on housing and accommodation and other community services

The majority of the Project workforce will be FIFO and when on roster will be housed at the accommodation village. The Project is therefore unlikely to generate any demand for local accommodation, housing or community services.

Health services

The Project will maintain an on-site medical facility and ambulance to service the workforce. Local medical and health services are not expected to be accessed by the Project workforce. In the event that personnel need to be medically evacuated they will be conveyed to Ti Tree for airlift by the RFDS.

Emergency services - fire and rescue services and police

The Project will develop and implement safety protocols, incident management and emergency procedures. A Health and Safety Plan and Emergency Response Plan will be in place. These plans will consider among other things fire prevention and firefighting equipment and security. It is unlikely that the Project will increase demand for local police services and impact their ability to service the local community.



12.3.4 Impacts on property

Access within the properties

Concern was raised on the potential for the transport corridor to impact access to strategic areas of Stirling Station, particularly bores and gates, and areas of the station to the east. Stakeholders also expressed safety concerns with the potential for cattle to wander onto the access road. TNG has recognised these concerns by:

- ▶ locating the corridor largely along the southern boundary of Stirling Station to minimise disruption to the operation of the property;
- ▶ fencing of the corridor to exclude cattle; and
- ▶ committing to engage with the station owner to maintaining access to strategic areas of the station.

Property viability

Anningie Station has organic certification and Stirling Station is considering applying for it. Concerns were raised by the station owners on the potential for the Project to impact this certification. The Project is not expected to affect the organic certification as:

- ▶ no chemicals are used in the production of the magnetite concentrate and the magnetite concentrate product is benign;
- ▶ small amounts of ammonium nitrate will be used in blasting with any impact confined to the pit area;
- ▶ all hazardous materials (primarily diesel) will be transported and stored in compliance with regulations. Diesel will be stored in self-bunding tanks;
- ▶ all waste will be appropriately treated and disposed of;
- ▶ chemicals are not proposed to be used for dust suppression; and
- ▶ the mine site and access road will be fenced.

12.3.5 Amenity impacts

Stirling Station homestead is located 50 km to the east of the mine site and 22 km north of the transport corridor. Anningie Station homestead is located 30 km south west of the mine site. The Wilora Aboriginal Community is located 20 km to the north of the transport corridor.

Air, noise and vibration modelling indicates that no sensitive receptors will be impacted by the Project.

12.3.6 Traffic and safety impacts

Concern was raised on the potential for trucks carrying magnetite concentrate to pose a safety issue when crossing Stuart Highway. Project design now incorporates an underpass of Stuart Highway to avoid the potential for traffic conflict.

An at-grade intersection will be provided between the Stuart Highway and the access road to allow vehicle movement to and from the mine site. The design of the intersection will be in consultation with the NT Department of Transport. This will include the design of acceleration and deceleration lanes and the incorporation of appropriate signposting to avoid or minimise any impact on other road users.



During construction the Project is expected to generate up to 30 one-way light vehicle movements, six one-way bus movements and 30 one-way heavy (truck) vehicle movements per day. During operations the Project is expected to generate up to 20 one-way light vehicle movements, five one-way bus movements and five one-way heavy (truck) vehicle movements per day. A traffic assessment indicates that the Project will contribute to a small increase in vehicle numbers on Stuart Highway, and is not likely to impact on the capacity of the highway with the highway operating at around 3% of its design capacity.

12.3.7 Summary of social impacts and assessment

A risk assessment was undertaken for the impacts described above, with results provided in Table 12-2.

Table 12-2 Summary and assessment of social impacts

Impact description	Project phase	Nature of impact	Likelihood	Consequence	Impact significance
Business development opportunities, employment opportunities and flow on benefits experienced in the regional study area and wider area of influence.	Construction Operation	Positive	Almost certain	Significant	High
Upgrade of Ti Tree airport.	Construction	Positive	Almost certain	Significant	High
Potential draw of existing workers into better paying resource jobs leading to shortfalls in other industries.	Construction Operation	Negative	Possible	Moderate	Medium
The remote location of the mine and with the workforce housed at the accommodation village, no impact to local community values, lifestyle and amenity are expected.	Construction Operation	Neutral	-	-	-
Due to the remote location of the mine, the medical facilities available on site, and with the workforce housed at the accommodation village, no impacts to local housing and social infrastructure services are expected.	Construction Operation	Neutral	-	-	-
Potential impacts from the transport corridor have been avoided by Project design elements which will maintain continued access to and within the station.	Operation	Neutral	-	-	-
Potential risk to the organic certification of Anningie and Stirling stations is unlikely due to Project design features.	Construction Operation	Neutral	-	-	-
No amenity impacts on surrounding sensitive receptors are predicted	Construction Operation	Neutral	-	-	-
Impact from traffic is unlikely due to fencing of the transport corridor, underpass of Stuart Highway, appropriate intersection design and low vehicle numbers.	Construction Operation	Neutral	-	-	-



In conclusion the assessment has identified the potential economic and employment benefits for the regional communities, with a potential negative impact being the draw of existing workers from their current jobs into higher paying resource related jobs creating shortfalls in existing industries. The assessment shows 'neutral' impacts on other social indicators including demographic changes and impacts on community values, impacts on housing and social infrastructure, impacts on property, amenity impacts, and traffic and safety impacts.

12.4 Impact Mitigation and Management Strategies

TNG is committed to a long term relationship with the regional study area and although the Project is not likely to generate significant negative impacts, TNG will have in place adaptive management strategies to enhance their positive contribution to the communities, and to monitor and review impacts on a regular basis and address them if they arise.

12.4.1 Stakeholder engagement and grievance management

TNG is committed to continued and ongoing engagement with stakeholders throughout the planning, development and operation phases of the Project. The objectives of ongoing engagement are to:

- ▶ maintain an open dialogue regarding Project timing and activities as approvals are secured; and
- ▶ encourage stakeholders to continue to raise concerns and queries directly with TNG for response or resolution throughout the Project planning, development and operation phases.

Consultation will continue throughout the life of the Project to ensure the consideration of all relevant and appropriate opportunities and concerns. TNG values all stakeholder comments and feedback, and will assess all stakeholder concerns or issues about the Project and take appropriate action as required.

TNG will have in place a Grievance Management Procedure that is communicated to all relevant staff members. All community enquiries and complaints will be responded to promptly.

12.4.2 Opportunities for Indigenous communities

TNG will continue to engage with the traditional owners and maintain community relations with Indigenous communities and Land Councils relevant to the Mount Peake Project. In consultations with the Land Council TNG has negotiated an Indigenous Land Use Agreement with the traditional owners of the Mount Peake Project area.

Through the cultural heritage management plan and native title processes TNG will continue to work with traditional owners to further develop and agree on Indigenous business and employment opportunities. Through the implementation of its Indigenous Relations Policy, TNG will ensure that mutual benefits from mining activities, such as employment and training, are shared with local communities.

12.4.3 Workforce management

TNG will have in place a Workforce Management Plan (WMP) to manage the Project workforce, maximise benefits for local employment and manage cumulative impacts on demand for local workers.

A number of specialist contractors will be engaged through the construction and operations phases of the Project. It will be the responsibility of the contractors to recruit and manage the workforce that they require. Through the terms and conditions of engagement the contractors will be responsible for implementing the WMP.



12.4.4 Community benefit fund

As the Project will not result in any significant negative social impacts, no impact mitigation strategies are proposed. However as part of the long term relationship with the regional communities TNG will consider establishing a community benefit fund to provide support for social infrastructure or other suitable development activities in the regional study area. The details of the community benefit fund will be developed by TNG in consultation with the Central Desert Shire Council and other key stakeholders.

12.4.5 Monitoring and Review

It is possible that changes to the Project and the socio-economic and political context of the region may bring changes to the impacts identified and assessed as part of this ESIA. To accommodate changes over time, TNG will continue to monitor impacts through the ongoing stakeholder engagement and grievance management mechanisms. Reporting on social indicators will be included in TNG's annual internal reporting process.

The ESIA and the community benefit fund arrangements will be reviewed annually during construction and every five years during operations.

