3 Social Impact Assessment

This section provides a summary of the social impact assessment undertaken for the Project, incorporating both the Mine and Rail aspects. The social impact assessment has been undertaken in accordance with the requirements of the Terms of Reference (ToR) and a table cross-referencing these requirements is provided in Volume 4 Appendix C ToR Cross Reference Table. A detailed assessment report is included in Volume 4 Appendix F Social Impact Assessment Report.

3.1 Introduction

3.1.1 Overview

A Social Impact Assessment (SIA) was undertaken to consider such matters as the social and cultural area of the Project and the social baseline of that area. The potential impacts of the Project upon these matters and associated mitigation measures were also included in the SIA, and further developed in a Social Impact Management Plan (SIMP). The SIMP is provided in Volume 4 Appendix G Social Impact Management Plan and summarised in Volume 1 Section 4.

Community engagement for the SIA was integrated with the EIS consultation process. The SIA was undertaken in consultation with the former Department of Economic Development and Innovation Social Impact Assessment Unit (SIAU), Isaac Regional Council (IRC), Charters Towers Regional Council (CTRC), Mackay Regional Council, Whitsunday Regional Council (WRC), Central Highlands Regional Council (CHRC) and Townsville City Council (TCC). Specific consultation was undertaken with IRC to identify relevant service providers. The relevant service providers were also consulted. Land negotiations undertaken between Adani and landholders were used in lieu of case studies.

Further information on the community engagement process is provided in Section 3.1.4.

The SIA comprised:

- A scoping exercise, which determined the social and cultural area of the Project
- A social baseline study, which determined existing socio-economic conditions
- An impact identification phase, which determined potential impacts within the social and cultural area
- A management strategies phase, which determined mitigation measures for negative potential impacts

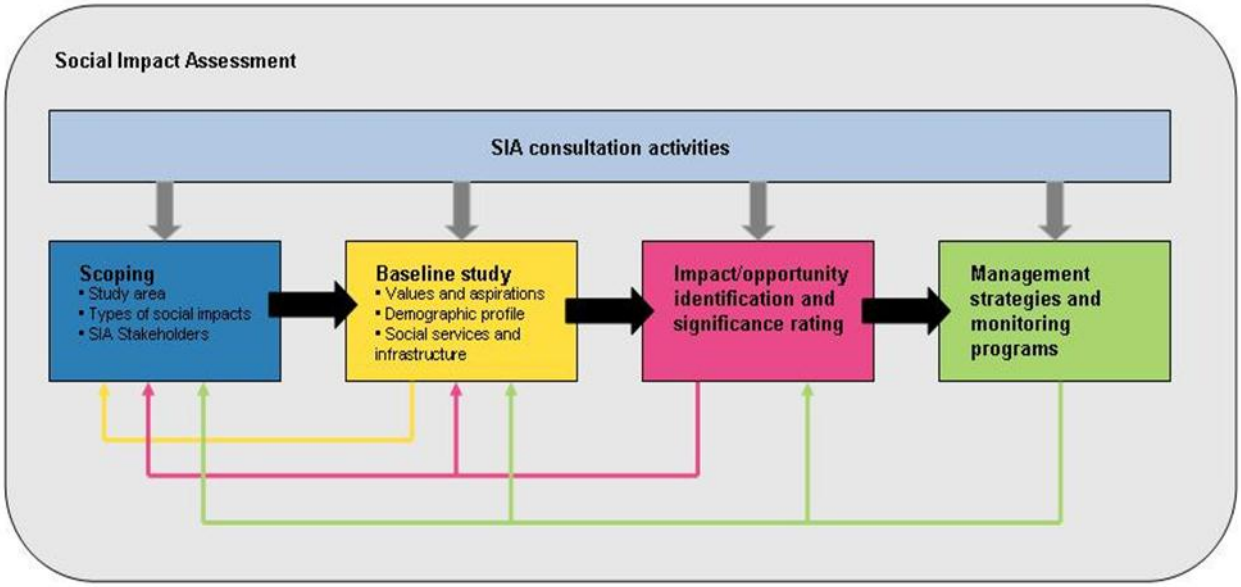
3.1.2 Methodology

The methodology for the SIA was developed in response to the Project Terms of Reference (ToR) (refer to Figure 3-1). The methodology took into account the principles set out by the International Association for Impact Assessment. These principles include:

- the uncertainty principle, which states that our knowledge of the social world can never be certain
- the precautionary principle, which states that uncertainty should not preclude attempts at mitigation

- the prevention principle, which states that it is preferable and cheaper to prevent impacts than to rectify them later
- health and safety, which states that all interventions should consider the physical, mental and social wellbeing and safety of all people

Figure 3-1 SIA Methodology



The scoping exercise determined the SIA Study Area as the social and cultural area where the construction, operation and decommissioning of the Project may have an impact. Communities, projects and infrastructure at the local, regional and state scale were considered. Information was sourced from relevant local plans, regional plans, Queensland Government policies, research publications, prior SIAs and other similar studies. The SIA study area was confirmed after feedback from State Government and SIAU on a draft SIA.

The purpose of the social baseline study was to provide information about the existing condition of the Study Area prior to the construction of the Project. Information was sourced from relevant local plans, regional plans, Queensland Government and regional council websites, Census data from the Australian Bureau of Statistics (ABS), projections and estimates from the Office of Economic and Statistical Research (OESR), negotiations between the Adani and landholders, and consultations with the SIAU, regional councils, service providers.

The impact identification phase determined potential impacts experienced by people as a direct result of social change processes set in motion by the Project. The significance of potential impacts was determined based on the severity, likelihood, duration, spatial extent and importance of the impact. Information was sourced through SIA consultations, a desktop literature review, and information from discussions with landholders held by Adani.

The management strategies phase determined mitigation measures including roles and responsibilities of proponents, government, regional stakeholders and communities. The management phase also included the production of a SIMP. The SIMP was produced in accordance

with the Queensland Governments *Social impact assessment: Guideline to preparing a social impact management plan* (DIP 2010). Regional councils, service providers and landholders continue to be engaged in ongoing consultation to enable the continued development of mitigation measures.

Additional information was sourced from community information sessions, focus groups with traditional land owners and various relevant websites and telephone services. In line with the uncertainty principle, it was acknowledged that the potential impacts may change as further information comes to light during the detailed design, construction and operation of the Project. It was recognised that some baseline information, potential impacts and mitigation measures were based on estimates of the characteristics and size of the Project's workforce. Furthermore it was recognised that the SIA applied to the Project as described in the EIS, and that any future changes or revision to the Project outside of this description were not considered.

3.1.3 Study Area

The Study Area was defined at a local, district and regional scale. The regional study area comprises the local government areas (LGAs) of Isaac, Charters Towers, Townsville, Whitsunday, Mackay, and Central Highlands. The district study area (DSA) comprises Isaac Regional Council and Charters Towers Regional Council areas. The local study area comprises the former Belyando Shire which includes the towns of Moranbah and Clermont, as well as those landholders directly affected by the mine and rail corridors.

Social values, indigenous social and cultural characteristics, settlement and land use patterns, physical and social infrastructure, and other projects were considered in charting the potential for impacts to occur at each level of the social and cultural area. Initial searches of the native title register returned native title claims from the Wangan and Jagalingou People, Jangga People and Barada Barna People. Native title rights and interests are to be considered in Indigenous Land Use Agreements (ILUAs) and cultural heritage impacts are included in the EIS (refer to EIS Volume 1 Section 5 Indigenous and Non-indigenous Cultural Heritage.

The predominant settlement and land use pattern within the local study area is agricultural; settlements are sparse, consisting mainly of isolated homesteads. With regard to physical and social infrastructure, a network of local roads and watercourses runs through the vicinity of the Project Area. The Project (Rail) is intersected the Gregory Developmental Road and joins with an existing rail line south-west of Moranbah.

A number of other projects were identified as being of potential relevance in terms of cumulative social impacts. These were:

- Alpha Coal Project
- Kevin's Corner
- Galilee Coal
- South Galilee Coal Project

Further details of these projects are provided in Section 1.4. Adani is also aware of the China Stone Project within the region, however insufficient information is currently available) to enable inclusion in the assessment. The respective port development projects (see Section 1.4) are not included in the SIA as the projects are geographically separate and do not overlap in terms of social effects.

3.1.4 Community Engagement

Community engagement for the SIA was integrated with the EIS consultation process. Table 3-1 provides a schedule of SIA / EIS consultations at each level of the social and cultural area. Consultations were initiated with:

- Landholders
- Traditional owners (TO)
- Service providers and regional stakeholders
- Communities at the regional level
- IRC and CTRC
- SIAU

Table 3-1 Schedule of SIA and EIS Community Consultations

Timing	Component of EIS	Stakeholder	Purpose/Outcome
March 2011	EIS Public consultations	Government agencies	EIS Agency briefings
March 2011	EIS Public consultations	Community in the DSA	Community information sessions (EIS commencement and Project introduction)
March 2011	SIA milestone meeting #1	SIAU	Confirmation of SIA scope, method and social and cultural area of influence
March 2011	SIA	IRC	Initial discussion on SIA methodology
June 2011	SIA Baseline study consultation	IRC	Meetings with IRC representatives and officers to collect, verify and interpret regional and district baseline data
June 2011	SIA Baseline study consultation	Service Providers and regional stakeholders (Clermont and Moranbah)	Focus Groups meetings to collect, verify and interpret regional and district baseline data
June 2011	SIA milestone meeting #2	SIAU	Meeting with SIAU for a progress update and outline initial findings of the regional baseline
August 2011	EIS public consultations	Community in the DSA	Progress update on preliminary findings of EIS technical studies
November 2011	SIA Impact Identification and initial mitigation strategies consultation	IRC	Meetings with IRC representatives and officers in Moranbah and Clermont for impact identification in the regional and DSA
November 2011	SIA Impact Identification	Service Providers and	Focus Groups for impact

Timing	Component of EIS	Stakeholder	Purpose/Outcome
	and initial mitigation strategies consultation	regional stakeholders (Clermont and Moranbah)	identification in the DSA and initial discussions regarding potential management and mitigation strategies
November 2011	SIA	Landholders	Landholder Case studies for baseline and impact identification in the local study area
December 2011	SIA	SIACAR Group	Presentation to the SIA Cross Agency Reference Group
December 2011 – August 2012	CHMP	Traditional Owners	SIA engagement with TO groups and representatives
February 2012	SIA (SIMP – management and monitoring)	IRC, CTRC	Meetings
July - August 2012	SIA (SIMP – management and monitoring)	Service Providers, stakeholders and Councils within the DSA	Meetings in Townsville, Emerald, Clermont, Moranbah, Mackay, Charters Towers and Brisbane

The SIAU was consulted on the SIA methodology, the social and cultural area, social baseline information at the local and regional levels, potential impacts at the local and regional levels, mitigation measures at the local level, and the SIMP. IRC was consulted to identify social baseline information, potential impacts, mitigation measures and monitoring programs. Service providers were also identified through consultation with IRC. CTRC were approached to engage in consultation yet did not become actively involved.

In line with the agreed SIA methodology, invitations were sent to all affected landholders to participate in case studies, including providing feedback on baseline information, potential impacts and mitigation measures at the local level. As a single response was received, the results of the case studies have been withheld to preserve the anonymity of the respondent. Information given during land negotiations undertaken between Adani and landholders was used in lieu of these case studies.

Consultation was held with traditional owners in February 2011 (refer to EIS Volume 1 Section 5).

Service providers were consulted over social baseline information, potential impacts, mitigation measures and monitoring programs.

Internal stakeholders working within the EIS process such as design engineers, technical study teams, land agents and legal counsel were consulted on baseline information, potential impacts and mitigation measures.

Further information on consultations including EIS public consultations with communities at the regional level is included in the EIS (Refer to EIS Volume 4 Appendix I Consultation Report).

3.2 Social Baseline

The key findings of the SIA relate to the DSA. As such this section presents the social baseline for the DSA. An assessment of the Study Area at the local, district and regional level is included as Volume 4 Appendix F Social Impact Assessment.

The DSA covers a total area of comprises the two 127,228 km^2 and comprises the LGAs of:

- Isaac Region
- Charters Towers Region.

The baseline assessment has been undertaken using publicly available quantitative data, and has been complemented by qualitative information drawn from various strategic planning documents and policies, as well as information obtained during the stakeholder consultation process.

Table 3-2: Key Baseline Community Characteristics for DSA

Socio-economic Variable from ToR	Data Source	District Summary
Total population and FTE equivalent population	OESR, 2012 (b)	2011 estimated total population = 35,934 with an annual average growth rate of 1.6 per cent per annum. (2006-2011).
Non-resident workers FTE Population	OESR, 2012(c)	27 per cent of Isaac Region's total population are 'non-resident' (about 13,590 persons) – FTE population of 36,540 in 2011. Consultation with Clermont and Moranbah community suggests an expected future increase in non-resident workers due to mining activity. OESR forecasts increase of 5,700 additional non-resident workers in Isaac Region between 2011-2016.
Existing of anticipated major population trends and changes irrespective of project	OESR, 2012 (b)	DSA population estimated to reach 51,963 by 2031 – 15,707 additional residents at an average growth rate of 1.8 per cent per annum Focus of future population growth will be in the Isaac Region.
Household composition	ABS, 2012	Family households - 74.9 per cent; Single/lone person households – 22.0 per cent; Group households - 3.2 per cent.
Family structures	OESR, 2012 (b)	In 2011, 8,344 families in the DSA (about 5,300 in Isaac Region, and 3,000 in Charters Towers Region). 'Couple Families with Children' are the dominant family type. High representation of 'One Parent Families' in Charters Towers, compared with Isaac Region and Queensland average.
Age and gender	OESR, 2012 (b)	Ratio of males/females is uneven, with higher

distributions		proportion of men. District has a youthful age profile – 70 per cent of residents aged <45, compared to state average of 62.6 per cent. Children <15 years represent almost a quarter of the population. Charters Towers Region has an older profile, whilst Isaac Region has very few senior citizens aged 65 + (4.1 per cent).
Education, including schooling levels	OESR, 2012 (b)	Highest level of school completed (for persons aged 15+) = 1,814 'did not go to school, or Year 8 or below'; 8,533 'Year 9 or 10 or equivalent'; 11,772 (46.6 per cent) 'Year 11 or 12 or equivalent'. Isaac Region has a higher level of schooling than Charters Towers Region. Post-school qualifications in 2006 - 45.2 per cent of DSA, compared with the Queensland average of 50.4 per cent.
Measures of community safety, health and wellbeing	Public Health Information Development Unit (PHIDU) 2010	Self-assessment of health in former LGAs of Isaac Region was lower than the Queensland average. Former LGAs in Charters Towers Region had higher rates of people with a risk factor, self-assessment of poor health and psychological distress than Queensland.
Cultural and ethnic characteristics Place of birth	OESR, 2012(b)	Less cultural diversity than Queensland. 8.5 per cent of DSA population were born overseas, compared to 20.5 per cent in Queensland. Isaac had marginally higher representation of persons born overseas than Charters Towers (9.9 per cent and 6.0 per cent respectively).
Indigenous population including age and gender	OESR, 2012(b)	In 2011, 4.5 per cent of persons in the DSA identified as ATSI, compared to 3.6 per cent in Queensland.
Income	OESR, 2012(b)	28.8 per cent of persons working in the Charters Towers and Isaac Regions earned <$400/week compared with state average of 34.6 per cent. Lower individual incomes are focused on the Charters Towers Region. In contrast, Isaac Region had the highest proportion of persons earning >$2,000/ week (23.1 per cent) compared with 5.5 per cent for Queensland.
Unemployment	OESR, 2012(b)	Unemployment rates are low in the DSA. For March 2012 quarter unemployment was 3.4 per cent, compared with 5.5 per cent in Queensland. Unemployment higher in Charters Towers at 7.8 per cent, in comparison to Isaac at 1.2 per cent.
Labour force by	OESR, 2011(b)	In 2006, Mining was largest industry of employment

occupation and industry		(30.6 per cent). Other key employers were Agriculture, Forestry and Fishing (11.3 per cent), Retail Trade (8.3 per cent), and Education and Training (7.5 per cent). Largest occupation categories were Machinery Operators and Drivers (20.9 per cent), Technicians and Trades Workers (18.2 per cent), Managers (13.9 per cent), and Labourers (13.7 per cent).
Disability prevalence	OESR, 2012(b)	Proportion of persons in need of assistance with a profound or severe disability was significantly less in Isaac Region than Charters Towers Region at 1.4 per cent and 5.8 per cent respectively. The Queensland average was 4.4 per cent.
Socio and economic index	OESR, 2011(b)	Charters Towers Region had a high number of people in the most disadvantaged quintile with 47.4 per cent, whereas Isaac had 5.1 per cent. High rates in Charters Towers may correspond to higher unemployment and lower incomes.
Crime	QPS, 2012	The most common crimes in the DSA were Offences Against Property; Other Offences; Other Theft (excl. Unlawful Entry); and Traffic and Related Offences. Crimes exceeding the state average were Traffic and Related Offences; Fraud; Weapons Act Offences; Breach Domestic VPO; and Stock Related Offences. The incidence of crime is higher in Charters Towers Region than Isaac Region.
Housing tenure type and landlord type for rental properties	OESR, 2012(a)	26.8 per cent of occupied private dwellings in DSA were fully owned, 20.4 per cent were being purchased and 48.4 per cent were rented. Very high proportion of rentals in Isaac (60.8 per cent), which is common in mining industry areas, compared with 48.8 per cent in Queensland and 28.8 per cent in Charters Towers.
Housing type	OESR, 2012(a)	In the DSA there are 10,859 occupied private dwellings comprising separate houses (89.6 per cent), semi-detached houses (3.3 per cent), and apartments (2.9 per cent).
Housing costs	www.rpdata.com www.pricefinder.com.au	Median house prices in the townships of Moranbah, Clermont and Charters Towers have all experienced strong growth for the period 2001 to 2010. Median house prices (May 2012) – Moranbah ($699,000), Clermont ($292,000), Charters Towers ($237,000). In comparison, Queensland registered a median of $396,000
Housing availability	OESR, 2012(a)	Housing stress and declining affordability evident in DSA, particularly Moranbah. In the 12 months to March 2012, there were 283 dwelling units in new residential buildings approved in the DSA.

3.2.1 Population

Resident Population

As shown in Table 3-3, in 2011, the DSA had an ERP of 35,934 comprising about 23,000 people (or 64 per cent) in Isaac and 13,000 (36 per cent) in Charters Towers Region. The DSAs resident population increased moderately by 2,666 between 2006 and 2011 at a rate of 1.6 per cent per annum compared to the state average of 2.3 per cent per annum. Isaac Region has a dispersed settlement pattern with 77 per cent of the population residing in the five largest townships as shown below. In contrast, Charters Towers' population is concentrated in one key centre.

Projected population growth will be solid over the next 20 years with almost 52,000 residents expected to be living in the DSA by 2031 which is an increase of about 15,700 persons. Isaac will accommodate most growth (87 per cent of the total), primarily in Moranbah due to the availability of employment opportunities and increased levels of services and infrastructure. This growth is being supported by declaration of the Moranbah Urban Development Area (UDA). Growth in Charters Towers will be more subdued (1,984 additional residents).

Table 3-3: DSA - Population by Locality

Locality	Population by Year (pr)		
	2001	2006	2011
Isaac Region			
Moranbah	6,338	7,607	8,934
Dysart	2,500	3,340	3,039
Middlemount	2,001	2,174	2,121
Clermont	2,006	1,976	2,263
Glenden	909	1,179	1,331
Nebo	206	298	396
Charters Towers Region			
Charters Towers	8,751	8,468	8,447
Ravenswood	246	203	203

pr = preliminary rebased
Source: OESR 2011(b) and 2012(c)

Non-Resident Workforce

The estimated number of non-resident workers on-shift in the Isaac Region grew from 7,080 in 2006 to 13,590 in 2011. In addition to 'usual residents' this equates to a FTE population of 36,540 i.e. 27 per cent of the total population are 'non-residents' who work in the area and live in the area temporarily while rostered on shift, but return to their usual place of residence when rostered off (OESR, 2012c).

Several smaller population centres in Isaac have a concentration of non-resident workers on-shift that exceeds permanent residents, notably Nebo, Coppabella, Glenden and Middlemount.

From discussions with stakeholders in Clermont and Moranbah, the community expects Isaac's non-resident population to increase substantially as a result of mining sector growth and have identified an escalating shortage in accommodation for non-resident workers in and around these towns. The OESR forecasts an increase of 5,700 additional workers in Isaac Region by 2016 (38 per cent of FTE population). The OESR non-resident data does not include Charters Towers Region. There is limited mining activity in Charters Towers.

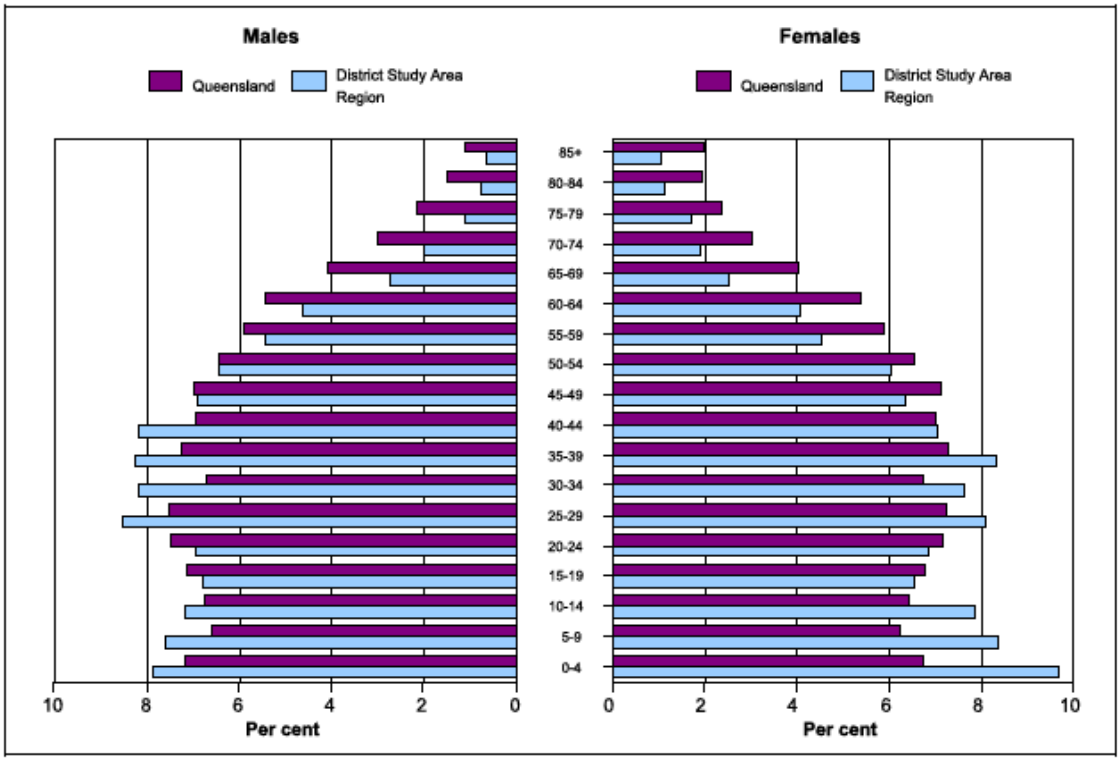
Age and Gender

The DSA is characterised by an uneven ratio of males to females with higher proportion of men, particularly in the working age groups. Overall, the District has a youthful profile with 70 per cent of residents aged under 45, compared to state average of 62.6 per cent. Children aged under 15 represent almost a quarter of the population.

Charters Towers Region has an older profile with 14.2 per cent of residents aged 65 or more, in comparison to the DSA (7.8 per cent) and Queensland (24.8 per cent). Significantly, Isaac Region has fewer senior citizens, with only 4.1 per cent in the 65+ age group.

Figure 3-2 shows the population pyramid for the DSA and Queensland for 2010.

Figure 3-2: Population Pyramid for the DSA, 2010



Source: OESR, 2012(c).

Cultural and Ethnic Diversity

The DSA has less cultural diversity than Queensland with only 8.5 per cent of residents born overseas, compared to 20.5 per cent across the state. Isaac had higher representation of overseas-born persons than Charters Towers (9.9 per cent and 6.0 per cent respectively). In 2011, 4.5 per cent

of persons in the DSA identified as Aboriginal or Torres Strait Islander, which is marginally higher than the Queensland average of 3.6 per cent.

Families

In 2011, there were 8,344 families in the DSA with approximately 5,300 in Isaac and 3,000 in Charters Towers. 'Couple Families with Children' are the dominant family type. The percentage of 'One-parent families' in Charters Towers Region was almost double that of Isaac Region at 16.6 per cent and 8.4 per cent respectively. It is noted that 'singles' are not included in OESR family statistics.

Population Mobility

Almost half of the people in the DSA (49.0 per cent) resided at a different address within five years prior to the 2006 Census, which is higher than the Queensland rate (47.6 per cent). At the LGA level, slightly higher mobility is evident in Isaac Region (50.5 per cent). Greatest inflows to the District are from other locations within Australia. Overseas migration makes up a small proportion of the total at 2.0 per cent (based on 5 years) compared with a state average of 4.4 per cent.

Based on the summary of population characteristics above, the full baseline analysis and stakeholder feedback, key considerations for the Project will be:

- Effects of high population growth and associated change in mining areas need to be understood and managed to ensure quality social outcomes for existing and future communities
- The increasing concentration of non-residents workers in the DSA will need to be considered from a community development perspective to help strengthen social inclusion and identity. This is particularly important where small population bases are dominated by non-resident workers.

3.2.2 Education, Employment and Training

Education

Overall, the DSA appears to have a lower level of educational attainment than the state. In terms of schooling, 46.6 per cent of the District population aged over 15 completed Year 11 or 12 (or equivalent), compared to the State average of 55.3 per cent. Isaac Region has a higher level of schooling than Charters Towers Region.

45.2 per cent of the DSA population had a post-school qualification, compared with 50.4 per cent in Queensland. Where the level of education was stated, a Certificate qualification was most common in the DSA at 62 per cent. The high proportion of people with Certificate, I, II, III and IV qualifications in Isaac Region reflects the prominence of mining and associated industries in the area.

Unemployment

The DSA displays high labour force participation with an unemployment rate of only 3.4 per cent in the March quarter of 2012, compared with 5.5 per cent in Queensland. Conditions vary at the LGA level, with a high of 7.8 per cent in Charters Towers and a low of 1.2 per cent in Isaac.

Industries of Employment

In 2006, Mining was largest industry of employment (30.6 per cent). Other key employers were Agriculture, Forestry and Fishing (11.3 per cent), Retail Trade (8.3 per cent), and Education and Training (7.5 per cent). Largest occupation categories were Machinery Operators and Drivers (20.9 per cent), Technicians and Trades Workers (18.2 per cent), Managers (13.9 per cent), and Labourers (13.7 per cent).

Income

2011 Census figures indicate higher individual income levels within the DSA compared to the state. This is particularly evident in the higher income bracket of $2,000 or more per week with 16.4 per cent labour force participants in the DSA compared to 5.5 per cent in Queensland.

Differences between the two LGAs that make up the DSA are significant, with lower individual incomes focused on the Charters Towers Region, where 39.2 per cent of the workforce earns less than $400 per week. In contrast, Isaac Region had a high percentage of individuals earning more than $2,000 per week (23.1 per cent) compared with Queensland and Charters Towers (5.5 per cent and 4.5 per cent respectively).

Based on the district snapshot of education, employment and training above, the full social baseline and feedback from SIA consultations, key considerations for the Project will be:

- Incomes and unemployment conditions vary between LGAs within the DSA
- Isaac Region demonstrates higher rates of labour force participation and lower rates of unemployment
- As the income gap widens across the DSA, there is potential for increasing financial stress on lower income households not engaged in the mining industry
- Although the current workforce is well equipped to support mining and related industries, more skilling and training is needed to increase workforce capacity for existing and future projects in the DSA
- Access to vocational training and tertiary education is required for youth and adults across the district to improve their skills and qualifications for projects of this nature

3.2.3 Housing and Accommodation

In 2011, there were 10,858 occupied private dwellings within the DSA, of which 26.8 per cent were fully owned, 20.4 per cent were being purchased and 48.4 per cent were rented. There is a very high proportion of rentals in Isaac (60.8 per cent), which is common in mining industry areas, compared with 48.8 per cent in Queensland and 28.8 per cent in Charters Towers.

Housing stress and declining affordability is evident in DSA, particularly in Moranbah where median house prices were nearing $700,000 in mid-2012. Charters Towers has not been affected by the same price spikes recording a median of $237,000.

During the consultation process, stakeholders consistently expressed concerns about land, housing supply and housing diversity constraints in Moranbah and emerging shortfalls in Clermont, together with inflated local property values.

The proportion of dwellings in Charters Towers Region subject to rental stress was more than double that of Isaac Region, however both Charters Towers and Isaac Regions were lower than the Queensland average.

In terms of housing and accommodation at a district level, key considerations will be:

- The changing profile of household and accommodation types in the DSA
- Achieving long term housing affordability and choice for all sectors of the community.

3.2.4 Community Health, Wellbeing and Safety

Health and Wellbeing

Pockets of health-related social disadvantage are evident in the Charters Towers Region (resident population), which reflect higher unemployment, lower incomes and an older demographic.

Charters Towers Region had a larger proportion of people with a health risk factor (smoking, harmful use of alcohol or obesity), self-assessment of poor health and psychological distress than Queensland. It also had a high number of people in the most disadvantaged SEIFA quintile at 47.4 per cent, whereas Isaac had only 5.1 per cent.

Crime and Safety

The most common crimes in the DSA were Offences Against Property; Other Offences; Other Theft (excluding. Unlawful Entry); and Traffic and Related Offences.

Crimes exceeding the state average were Traffic and Related Offences; Fraud; Weapons Act Offences; Breach of Domestic Violence Protection Order (VPO); and Stock Related Offences. The incidence of crime is higher in Charters Towers Region than Isaac Region.

Based on the health and wellbeing snapshot above, the detailed analysis, and feedback from service agencies/providers in the district, key considerations for the Project are:

- The capacity of health and other social infrastructure in the district is being stretched with population and industry growth
- In the DSA, traditional population triggers/ thresholds for health and other social infrastructure provision may not be suitable to address the future needs of resident and non-resident communities in the Galilee and Bowen Basins.

3.3 Potential Impacts and Proposed Mitigation Measures

3.3.1 Significance of Social Impacts

The significance of social impacts has been identified using a risk matrix as shown in Table 3-4, taking into consideration the likelihood and consequence of impacts, feedback from stakeholder groups, duration of the impact, spatial extent of the impact and importance of the impact to stakeholders. The risk ratings are based on experience from applications of previous similar assessments. The significance assessment methodology that was employed is detailed in Volume 4 Appendix F Social Impact Assessment. Note that the impacts of existing mining activity and

community ambitions and attitudes to mining have not been assessed as they are not impacts of this project. Impacts of the Project (Mine) and Project (Rail) have been considered jointly (i.e., cumulatively).

Social impacts and their significance were identified based on the Project information at the time of writing the SIA report and takes into consideration the information provided by landholders and regional councils, feedback during the EIA public consultation process and comparative studies. Given the potential nature of social impacts during the construction and operational stage of the Project, the approach to assessing impacts adopts relevant International Principles for Social Impact Assessment developed by the International Association for Impact Assessment. This includes the precautionary and uncertainty principle when predicting social impacts. The predicted social impacts and their significance may change as more information about the Project is known (during detailed design, etc.) and the Project is being constructed and operated. Therefore actual social impacts of the Project cannot be known for certain at this time.

Table 3-4 Assessment of Likelihood and Consequence of Identified Social Impacts

Likelihood of social Impact	Consequence of Social Impact				
	1 = Insignificant	2 = Minor	3 = Moderate	4 = Major	5 = Extreme
6 = Almost Certain	Medium	Medium	High	Excessive	Excessive
5 = Very Likely	Low	Medium	High	High	Excessive
4 = Likely	Low	Low	Medium	High	Excessive
3 = Possible	Negligible	Low	Medium	High	High
2 = Unlikely	Negligible	Low	Low	Medium	High
1 = Very Unlikely	Negligible	Negligible	Low	Medium	Medium

3.3.2 Project Workforce Profile

It is expected that the Project (Mine and Rail) will reach peak workforce in 2015 with approximately 3,700 workers and an overlap between construction workforce and operations workforce. The workforce drops significantly from 2015 – 2018 as the scale of construction activities reduces, particularly the rail construction.

The Mine is expected to reach full production of 60 Mtpa from 2022 onwards and it is assumed that workforce numbers will be relatively consistent after this time, at around 3,000 workers. Social impacts of the workforce after this time have not been considered due to likely changes in demographic and socio-economic characteristics of local and regional populations, as well as changes in government policies and planning frameworks.

Construction of the Project is currently scheduled to commence in 2013/2014 following receipt of environmental approvals and land acquisition processes. Initial construction activities will relate to off-site infrastructure such as road upgrades, the new airstrip and water storages and water supply pipelines and the workers accommodation village, as well as on-lease infrastructure required to commence mining activities. Construction activities on-lease will then continue to develop

infrastructure to meet the requirements of the staged development of the mine. There will be an overlap between construction and operational workforce at the Mine site for a period of years until all stages are constructed, and an ongoing requirement for a small construction workforce to construct infrastructure required as the mine expands.

Skills required for the operation of the Project (Mine) include truck operators, excavator operators, dozer operators, dragline operators, small excavator operators, grader operators, drillers, maintenance operators, CHPP operators, diesel fitters, electrical trades, mechanical fitters, shovel operators, standard long-wall mine personnel operators, electricians and mechanics, health safety and environment personnel, statutory supervisory mining personnel, technical mining staff (engineers, geologists), production supervisors and administration staff.

The rail is anticipated to run over four years with a construction peak labour force of approximately 1,300 people (including logistical support personnel) to be spread across four camps with capacity for 400 people at each camp.

It is expected that almost all workers will be recruited on a FIFO basis, flying in and out of one or more nominated collection points in population centres on the east coast of Queensland. This does not mean that workers will have their permanent residence at these locations. Workers may reside elsewhere in Queensland or Australia and travel independently to the nominated collection point, from where transportation to the proposed mine will be undertaken by Adani. Workers and their families may choose to relocate to the collection points, but this would be at the worker's discretion and not directed by Adani.

In terms of recruitment, the preference will be to gain as many personnel from within Queensland and Australia first, including training programs to up-skill those in the Australian labour market to meet the needs of the Project. Alternative sources of the required workforce, such as personnel from overseas, will be considered only where the Australian labour market cannot meet the needs of the Project and it is not possible to address shortages through training programs. It is not currently anticipated that any operational workforce requirements will be sourced from overseas.

3.3.3 Workforce Accommodation

3.3.3.1 Mine Village

A workers accommodation village will be constructed approximately 15 km east of the Project (Mine) site with access from the Moray Carmichael Road. Once completed, the workers accommodation village will cater for up to 3,000 persons to fully meet the requirements of the operational workforce. The camp will be developed as a series of accommodation unit clusters to promote a community environment, with each cluster having access to its own recreation and other facilities

An airstrip will be developed between the workers accommodation village and the Mine site to meet the requirements of a FIFO workforce. It is anticipated that workers will travel from the workers accommodation village or temporary construction camps to the Project (Mine) and Project (Rail) sites via buses or 4WDs.

3.3.3.2 Rail Camps

Four temporary construction camps will be also be developed to house construction workers for the Project (Rail) and at the western end of the alignment, rail construction workers will be housed at the workers accommodation village. The temporary construction camps will be relatively evenly spaced

along the rail alignment approximately 60 km apart reducing the distance construction teams need to travel to a maximum of about 30 km from each camp to the furthest work point.

The temporary construction camps will be located as close to the proposed alignment as possible. A construction access road will be built along the proposed alignment and will provide access from the temporary construction camps to construction areas. Buses and four wheel drives will be used to transport workers from the temporary construction camps to the work areas for each shift.

The Project (Rail) will reach its peak at a 120 person operational workforce by 2018. It is anticipated that the majority of the operational rail personnel will be based at of Bowen and Mackay and will work shifts.

Driver crews, consisting of a driver and co-driver will take empty trains from the East coast to the Project (Mine) where they will rest before returning to Dudgeon Point Coal Terminal or Abbot Point Coal Terminal with full trains. In any 24 hour cycle, three crews (six workers) will be required. Maintenance crews will be based at Mackay or Bowen with a smaller crew at the mine site.

3.3.4 Economic Growth and Regional Development

The economic impacts of the Project were modelled for the Mackay, Isaac, Whitsunday (MIW) regional area (refer to Volume 4 Appendix H Economics).

Potential positive economic impacts of the Project include:

- Generation of over $78.2 million per annum during the construction years, in the form of direct and indirect benefits to the MIW Gross Regional Product (GRP) from the Project (Mine), and $145 million per annum from the Project (Rail), of which a considerable proportion will be direct benefits such as purchase of local materials or services
- An increase of 7.8 per cent, of 2008-09 levels, in employment due to direct and indirect impacts of the Mine development to the MIW region and similar trends State wide where employment levels will increase from 1,502 FTE to 6,789 FTE in 2025, equating to an increase of 0.3 per cent during operation
- Direct and indirect boosts to employment by 4.9 per cent (of 2008-09 levels) within the MIW region and 0.19 per cent (of 2008-09 levels) throughout the State during construction of the Project (Rail)
- Household income is predicted to increase in the MIW region by 10.1 per cent solely due to the development of the Project (Mine) from 2008-09 value, to 2025, year 13 of the Mine life when it is operating at maximum production. At the State level, the long-term increase is expected to be almost $574 million, representing 0.45 per cent of the State total in 2008-09 ($128.6 billion)
- Provision of goods and services to the project from local businesses
- New employment opportunities, apprenticeships and training resulting in long term career pathways for residents of the DSA
- Flow on benefits in terms of employment and business activity at a regional level from increased economic activity

The proposed mine and associated infrastructure will require a range of goods and services which will be supplied by contractors. Requirements during both construction and operations may include routine and non-routine maintenance of mine plant, civil and structural engineering works, equipment and vehicles, supply of food and other consumables to the workers accommodation village, laundry

services, transportation services and services associated with environmental monitoring and rehabilitation. Local and regional businesses may be able to supply some of these services.

Local individuals and businesses have expressed a desire to register their interest for the Carmichael Coal project in relation to employment and the supply of goods and services. Currently, there are a number of businesses within the Clermont locality that service the two existing coal mines in the area, as well as other projects in the region.

Both Mackay and Bowen are large regional centres and as such there are local businesses in operation which would be able to supply goods and services to the rail operations.

The extent to which local and regional businesses will be able to supply goods and services to the Project will depend on a number of factors including the ability of the business to meet demand. In stakeholder consultation, local businesses reported that they find it difficult to compete with mining jobs in terms of pay, and that attracting and retaining apprentices is also a problem as apprentices tend to move into the mining sector. Local businesses, and to a lesser extent regional businesses in Mackay and Bowen may therefore be limited in their ability to expand to meet increased demand from a new mine.

Local businesses are generally quite small in size, and while many will have the advantage of reduced costs due to proximity to the proposed mine and rail, some may also struggle to compete with business located in larger centres. A local industry participation plan is proposed to establish linkages between the Project and local and regional businesses.

There is a considerable construction and operational workforce required for the project. The construction workforce for the mine and rail will generally be provided by contractors and subcontractors working on the construction project, and any opportunities for local employment is likely to be through these contractors and subcontractors. As construction work is temporary in nature, district residents looking for long term job opportunities would need to be prepared to move with the contractor to its next project, either on a permanent or FIFO basis. This may limit the attractiveness of construction work for local residents.

The workforce strategy for mine operation is based on recruiting workers from across Queensland and Australia on a FIFO basis. However, until road infrastructure is improved, opportunities for residents from the Issac or Charters Towers areas to gain employment at the proposed mine on a DIDO basis are likely to be limited. There is however expected to be a desire by local businesses to increase their workforce to meet the demands of the Project. A cooperative approach to ensuring local businesses can meet the needs of the project will be required to overcome any potential difficulties recruiting and retaining staff in areas other than the mining sector.

Table 3-6 shows the impacts in economic growth and regional development.

Table 3-5 Impacts on Economic growth and regional development

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Employment, apprenticeships, training associated with local businesses to attract and retain people within the local community working for local businesses	Construction and operation	Possible	Major	High	Local community	Positive
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction and operation	Likely	Moderate	Medium	Local community	Positive
Providing employment and training opportunities for Indigenous people	Construction and operation	Possible	Moderate	Medium	Indigenous community	Positive
Difficulties with integration of indigenous people in accommodation villages	Construction and operation	Possible	Moderate	Medium	Indigenous Community	Negative
Development of the local, district and parts of the wider regional area through Royalties for the Region	Operation	Very likely	Moderate	High	Local, parts of the district and parts of the regional community	Positive
People move from being employed in local business into the mining sector reducing the ability of local business to meet demands for goods and services	Construction and operation	Possible	Moderate	Medium	Local community	Negative
Rail						
Employment, apprenticeships, training within local businesses in Clermont and Moranbah supplying the rail construction	Construction	Possible	Major	High	Local community	Positive
Provision of goods and services to the project from local businesses in Clermont increasing the ability of local business to remain stable or grow	Construction	Likely	Moderate	Medium	Local community	Positive
Providing employment and training opportunities for Indigenous people	Construction and operation	Possible	Moderate	Medium	Indigenous community	Positive
People move from being employed in local business to take advantage of potential higher paid construction work reducing the ability of local business to meet demands for goods and services	Construction	Possible	Moderate	Medium	Local community	Negative

3.3.5 Housing and Accommodation Demand

A concern for the regional community is that the cumulative effects of mining development will exacerbate shortages in housing supply and decrease housing affordability. This leads to higher living costs for everyone, and particularly affects those not employed in the mining sector. The construction and operational workforce will be primarily FIFO with self-contained accommodation, with the potential for BIBO or DIDO depending on whether workers are recruited from regional communities. These effects have been observed in locations such as Moranbah where mining takes place in close proximity to the town. Housing prices and rental costs have increased as a result of demands from mining activity.

There is a strong desire from local communities to attract mine and rail workers and associated supporting industry workers and their families into the community. While SIA consultation indicated that land development in Clermont is slow, there has been considerable investment in residential development in the town with 80 townhouses, being the first stage of a multiple stage residential development in Clermont nearing completion. It is understood that all homes in stage 1 are sold, with 50 percent having been secured by Rio Tinto. Council is also progressing the development of affordable housing on an existing block in Clermont through the Isaac Affordable Housing Trust. It is intended that this development cater to retirees as well as individuals and families that meet the requirements of the National Rent Affordability Scheme[1].

A high cost of housing and rents has potential to disadvantage individuals and families not engaged in the mining sector which is resulting in a 'two-speed' economy. Consultation indicated that there are some concerns regarding lower income individuals and families leaving towns such as Moranbah.

Construction workforces for both the mine and rail will be provided by contractors and subcontractors and will be on a FIFO basis, staying in purpose built workers accommodation village and temporary construction camps. There will be no requirement to house construction workers in existing accommodation in the region as these facilities will provide for all workers.

The eastern end of the rail alignment is in closer proximity to larger settlements such as Moranbah, and there is potential for existing residents in these locations to be employed during construction. However any such workers will already be living in the area and will not increase demand for accommodation. Given the short term nature of the construction activities and the requirement for workers to utilise workers accommodation villages when on-roster, it is not likely that significant numbers of workers will relocate their families to communities in the region such as Clermont or Moranbah.

Increased economic activity associated with the construction activities may attract some people to the area, for example to work in local businesses servicing construction activities. This may affect Clermont, and Moranbah but is not likely to lead to population growth in excess of that already forecast for these towns, as forecasts undertaken by OESR factor in effects of construction projects. In the larger population centres of Emerald, Charters Towers, Mackay and Bowen, additional residents would represent a very small proportion of existing population.

[1] Established in July 2008, this Australian Government scheme provides financial incentives for investors to purchase new affordable housing that must be rented at a minimum of 20% below the market rent. For more information - http://www.communities.qld.gov.au/housing/housing-services/renting-in-the-private-market/national-rental-affordability-scheme

All mine workers will be employed on a FIFO basis and will be accommodated at the mine workers accommodation village. Due to travel distances, it is not proposed to accommodate FIFO workers in Clermont or other regional centres. As workers will be required to stay at the workers accommodation village while on roster and will not be permitted to travel home during shifts, it is unlikely there will be an incentive for workers to relocate their families to towns such as Clermont.

The Project (Mine) construction workforce is proposed to be FIFO, flown directly from a base, or bases, outside of the regional area to the Mine site. The workforce for two of the temporary construction camps is also to be flown directly to the Mine site and bussed to camps. The workforce for the eastern most camps is to be flown into Moranbah and bussed to the Mine site. The location of the easternmost camp is to be either at, or just south of Moranbah.

There may be potential in the future, once road infrastructure is improved, to operate BIBO from Clermont and other centres such as Emerald and Charters Towers if existing residents seek employment at the Mine but due to travel distances, all workers will be required to live in the mine workers accommodation village when on roster, and will not be able to return home between shifts. On this basis, it is unlikely that the direct mine workforce will create any additional population increase or pressure on housing in the district or region.

As the rail terminates at Abbot Point or Dudgeon Point, the majority of workers can be expected to be based out of Bowen or Mackay. Rail workers will work shifts, either driving trains or undertaking maintenance activities. Drivers will rest at the workers accommodation village with some rail workers being able to return home between shifts. A small number of rail workers will be required at the western end of the rail operation and will be on a FIFO basis, accommodated at the workers accommodation village.

Table 3-6 shows the impacts in housing and accommodation.

Table 3-6 Impacts on Housing and Accommodation

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Higher cost of living in Clermont as a result of higher housing prices, rental prices as workers in support industries seek to reside in the local community	Operation	Possible	Moderate	**Medium**	Local community	Negative

3.3.6 Roads, Traffic and Safety

The Mine site is located just off the Moray Carmichael Road accessed via the Gregory Developmental Road. The Mine will generate an increase in vehicle traffic along the route with the transport of equipment and supplies from both the north (Townsville) and the south (Moranbah, Clermont, Mackay) particularly during construction. With the workforce being FIFO, traffic is expected to be predominantly be for the transport of goods and services, with fewer personnel movements.

There will be a higher number of personnel movements by road during construction as people are transported via bus or 4WD between construction camps and construction locations. With much of the transport of equipment to site being via road, there is a high risk of damage to the road infrastructure,

especially local roads which are not designed for heavy and wide traffic. Disruption to traffic can be expected during construction as equipment and materials are transported to site, especially along the Gregory Developmental Road. Transport of materials associated with the rail construction will also have an impact on the road network with an increased number of heavy vehicles transporting equipment and supplies to various locations along the rail alignment. Increased pressure on Police for over-dimensional permitting and escort on roads is a concern for QPS.

The Gregory Developmental Road is a significant tourist route for Isaac Region and an increase in heavy traffic will have an impact on tourists, especially 'grey nomads' towing trailers who are not used to encountering large, heavy and often wide vehicles on regional roads.

At this stage, DIDO options are not being considered for the Project (Mine). The risk of driver fatigue increases with people driving to and from site before and after rosters. Driver fatigue and speed have both been identified as issues by QPS during SIA consultation.

The rail line will also require the construction of level crossings along the route resulting in potential conflicts between rail and road traffic that will need to be managed by the installation of appropriate safety warning measures.

SIA consultation identified that during operation, the rail may result in delays to emergency services, school bus routes, stock movements (vehicle and foot), and local traffic at intersections that are not grade separated. The nature of the delay has been estimated in the EIS Transport Report (EIS Volume 3, Section 11). This report estimates a maximum of six vehicles will impacted by train movement during the peak hour at grade crossings. These vehicles would be required to wait for a maximum of four minutes and 30 seconds.

A number of mitigation measures are proposed to manage roads, traffic and safety to be incorporated into traffic management plans for the Project.

Table 3-7 shows the impacts on roads, traffic and safety.

Table 3-7 Impacts on Roads, Traffic and Safety

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Traffic disruption along the Gregory Developmental Road, Peak Downs Highway (from Mackay), and the Flinders Highway (from Townsville) during construction	Construction	Almost certain	Minor	**Medium**	Road users	Negative
Increased traffic during operation on the Gregory Developmental Road, including safety of tourist traffic not familiar with large heavy vehicles on narrow roads	Operation	Almost certain	Minor	**Medium**	Road users	Negative
Increased maintenance requirements on local and state roads as a result of mine construction and	Construction and operation	Possible	Moderate	**Medium**	Road users, IRC and Transport and Main Roads	Negative

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
operation						
Rail						
Traffic disruption along the Gregory Developmental Road, Peak Downs Highway (from Mackay), and the Flinders Highway (from Townsville) during construction	Construction	Almost certain	Minor	**Medium**	Road users	Negative
Delays to traffic, including emergency services as a result of level crossings along the rail corridor	Operation	Possible	Moderate	**High**	Road users	Negative

3.3.7 Landholders and Amenity

Land currently utilised for agricultural purposes will be converted to a mine site and railway line. Some landholders will have their property (or properties) split by the mine site and/or railway line. This will create property management issues for landholders, particularly in relation to movement of stock and equipment across and between properties. Wait times for stock on foot or in trucks due to rail movements or Project-related road traffic may cause distress to cattle. Wait times will generally be in the order of five to ten minutes and hence not be long enough that cattle will lose condition. Time taken for landholders to complete tasks such as stock movement will potentially increase. AS Adani is the leaseholder for the main property affected by the proposed mine and off-site infrastructure, Moray Downs, potential impacts on this property will be more readily managed.

As the life of the Project is 90 years, this effectively sterilises land within the Project footprint. Further consultation will be undertaken with landholders as part of detailed land acquisition discussions to identify optimal locations for stock and occupational crossings of the railway line that minimise impacts on property management practices while also meeting safety requirements. Where feasible, grade separation will be provided, otherwise, gates and fencing will be required to prevent interactions with trains.

The Project will also cause changes to the natural environment, as identified in other technical studies within the EIS, and changes to the landholders living environment may be experienced. Both construction and operation of the Project may give rise to noise and dust emissions and detailed assessments of these potential impacts have been undertaken for the mine and rail, and are presented in Volume 2 and 3, Sections 7 (Air Quality) and 9 (Noise and Vibration) of the EIS. Landholders have raised concerns about the health impacts of coal dust from trains. Noise and dust levels meet Queensland environmental protection objectives at all residential locations and health impacts are therefore not expected. Coal dust management along the railway line will comply with standards set by QR Network in its Coal Dust Management Plan (QR Network, February 2010).

Cattle and other animals may be disturbed by noise and activity from construction and operation of the Project, particularly the Project (Rail). However, observations indicate that cattle in paddocks bordered by rail lines or main roads appear to adapt to the disturbance.

Components of the mine and rail will also be visible from residences on properties and from other nearby locations. A visual impact assessment has been undertaken and is presented in EIS Volume

4, Appendix K - Mine Landscape Visual Assessment, and Appendix X – Rail Landscape Visual Assessment. The assessment concluded that there were minimal impacts on visual amenity expected.

Processes relating to land access and land acquisition for major projects can be time consuming and stressful for landholders. This stress may cause or exacerbate personal and interpersonal issues and negative behaviours. While landholders will be compensated for loss of land and earnings, there may be a residual sense of loss associated with changes to the land. Adani will seek to minimise stress to landholders through its processes during land negotiations. Statutory requirements for land acquisition processes also allow landholders to access information requirements independently and get independent support from legal advisers, valuers and other professionals during the process.

Issues associated with water ponding and flooding due to the rail formation impacting existing overland flow paths are also a concern for landholders. This issue is being addressed through detailed local flooding studies and adoption of design measures to convey flood flows through the rail line as outlined in EIS Volume 4 Appendix AB – Rail Hydrology Report and Appendix P – Mine Hydrology Report.

With the presence of trains, construction and rail maintenance workforce and vehicles on properties, landholders are concerned about an increased risk of fire. The consequences of fire can be extreme to families and businesses that rely upon their properties for their livelihoods. Landholders may find themselves burdened with an increased need to respond to fires. Adani will adopt current industry standards in relation to minimising fire risk from rail construction and operation.

Table 3-8 shows the impacts on landholders and amenity.

Table 3-8 Impacts on Landholders and Amenity

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Likely	Moderate	**Medium**	Landholders	Negative
Disruption to cattle operations and increased labour requirements	Construction and operation	Almost certain	Minor	**Medium**	Landholders	Negative
Rail						
Changes to the living environment from increased noise and dust and reduced visual amenity	Construction and operation	Likely	Moderate	**Medium**	Landholders	Negative
Changes to the natural environment from changes to overland flow paths with potential for increased ponding	Construction and operation	Very likely	Minor	**Medium**	Landholders	Negative
Disruption to cattle operations and increased labour requirements	Construction and operation	Almost certain	Minor	**Medium**	Landholders	Negative

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Increased fire risk along the rail corridor	Construction and operation	Possible	Extreme	High	Landholders	Negative

3.3.8 Capacity of Social Services and Infrastructure

Major projects (such as the Project) can result in significant demographic changes due to influx of workers. Increased populations of resident and non-resident workers can place pressure on social and community services and infrastructure. However, the workforce recruitment and accommodation strategy proposed by Adani will limit changes to populations in existing towns.

During both construction and operation, it is anticipated that the large majority of workers will be sourced on a FIFO basis, and, when on roster, will reside in the workers accommodation village or temporary construction camps. It is not intended to house any workers in existing housing or accommodation facilities in Clermont, Moranbah or other locations and an influx of workers and families is therefore not expected. Existing residents of the DSA may be recruited by Adani or its contractors but this will not change the demographic profile of the study area.

Concerns were raised during SIA consultation regarding the current capacity of health and emergency services in the local and DSA. Pressures on telecommunications, particularly in Moranbah where there are existing problems accessing the internet at peak times, were also identified.

Stresses placed on workers and their families as a result of FIFO can lead to an increased demand for social services, especially emergency (social) housing which is at present under considerable pressure in Moranbah in particular. SIA consultation noted that there have been instances where FIFO workers have had to be temporarily removed from camps as a result of anti-social behaviour which may be attributable to family stress. In this instance, local support services have provided assistance. Other government agencies and services such as education and police are also already reported to be under considerable stress in the DSA and stakeholders indicated that for some services, capacity does not seem to be expanding in response to an increase in mining activity across the region.

Queensland Police Service (QPS) has raised the issue of increased resourcing required for the management of incident and emergencies on and off the proposed mine site and along the railway line. QPS indicated in July 2012 that Clermont has received additional Police resourcing in anticipation of mining activity in the wider area.

Non-resident workers tend to have very low participation rates in community service organisations and sporting clubs as they are not present in the community when off-roster. Despite large apparent populations, communities can sometimes find it difficult to field a sporting team when many team members are ‘on roster’ and volunteer organisations find it difficult to provide services to the community. By not participating in these sorts of activities, non-resident workers can be disconnected from the community and are not seen to contribute to vibrancy and social sustainability within the community.

The proposed workforce management and accommodation strategy for both construction and operation phases of the mine and rail project will minimise presence of non-resident workers in existing communities. Distances from the mine and western end of the rail alignment, and the intention to fly workers directly to a purpose built airstrip near the proposed workers accommodation

village will preclude workers being able to travel to Clermont or other local or regional centres to access community services and infrastructure.

The workers accommodation village is intended to be relatively self-sufficient with regard to communications infrastructure, recreational facilities and medical services and there will be no or very limited demand on government or private sector services provided in Clermont or other population centres. Security services will be provided, but in the event that a serious crime is committed, local police will need to attend to undertake a formal investigation and, if appropriate, make arrest(s).

The temporary construction camps for construction of the Project (Rail) will be temporary, of smaller capacity and, as such, will not have the level of services proposed for the mine workers accommodation village. Further, construction workers may be utilising their own vehicles to travel to the temporary construction camps and construction sites, particularly where they have specialised tools and equipment. Hence, during the construction period, workers may access towns such as Moranbah and make use of services available in the towns. However, the number of workers present is relatively small and construction is short term in nature, and hence, exacerbation of existing issues in towns such as Moranbah is not expected.

Overall, the construction and operation activities are not expected to exacerbate existing issues in relation to social services and infrastructure.

An emergency management plan will be developed for all components of the Project and this will include response to injuries and medical evacuations as well as fire response and response to road accidents. However, it is likely that local fire, police and ambulance services may also be required to respond, particularly to accidents on access roads, in the event of a suspected crime, and to large fires that extend beyond the Project area.

Adani will consult further with emergency service providers during the pre-construction, construction and operation phases in relation to emergency management and response so that responses can be coordinated and impacts on emergency service providers minimised. There may also be some opportunities for medical facilities at the mine site to be available to nearby residents, and for the airstrip to be utilised by others such as the in the event of emergencies requiring evacuation.

Those employed directly by the mine and rail construction are not expected to increase the demand on social services during construction. Due to the remoteness of the mine site in particular, the management of workforce health and wellbeing is particularly important and personnel are expected to have access to counselling and support services at the camps, rather than rely on service providers in Clermont or other population centres.

Some population growth may occur in Clermont and, to a lesser extent, other communities in the local and DSA as a result of increased economic stimulation. Growth is likely to be gradual and within population growth forecasts developed by OESR as these growth forecasts factor in known major projects in the region. SIA consultation indicated that such population growth can have both positive and negative impacts. Stakeholders felt that an increased population base would increase the vibrancy and social sustainability of the town, and also provide increased participation in community and sporting activities. On the negative side, demand for social and community services and infrastructure would increase and may lead to pressure on these services.

Population growth involving relocation of workers and their families to take part in local businesses is not likely to cause the types of impacts seen in communities where there is an influx of non-resident

workers. There would be an increased demand for community and social services and infrastructure but as changes would be gradual, it should be possible for this to be accommodated within normal planning processes for service provision.

The Clermont Preferred Futures group is looking to understand the potential impacts of mining activity on the community and develop a plan to accommodate this while maintaining the community values and aspirations for the town. Adani will continue to work with the IRC and the Clermont Preferred Futures Group to monitor population and demographic changes in Clermont and the former Belyando Shire area and develop responses as required to address any emerging social issues.

Site communications during construction will be generally UHF/VHF radio while on site, with a mix of Next G, satellite and existing hard asset communication technology for the operation of site administration facilities within the camps. One or more of these technologies is expected to be implemented at each campsite to suit to conditions. SIA consultation raised concerns about the capacity of the existing 3G network and its ability to cater for an increased load.

Table 3-9 shows impacts on social services and infrastructure.

Table 3-9 Impacts on Social Services and Infrastructure

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Increased demands on emergency services, including police, as well as health and education services as a result of an increased population at the mine site	Construction and operation	Likely	Moderate	**Medium**	Government agencies and services	Negative
Increased demands on social services to respond to the needs of the FIFO population	Construction and operation	Possible	Moderate	**Medium**	Service providers in communities	Negative
Rail						
Increased demands on emergency services, including police, as well as health and education services as a result of populations in construction camps	Construction	Likely	Moderate	**Medium**	Government agencies and services	Negative
Increased demands on social services to respond to the needs of construction workers	Construction	Possible	Moderate	**Medium**	Service providers in communities	Negative

3.3.9 Community Values and Change

There is concern amongst landholders and the wider community regarding the behaviour of the non-resident workforce and their impact on the community. These concerns are most likely based on previous experiences, either of the individuals or of those in their social networks, and are related to violence, anti-social behaviour, drug and alcohol abuse and safety issues in local communities. QPS

has raised similar concerns with potential for an increase in rural crime, including illegal hunting, trespass, 4WD damage to properties, theft, and break-ins. A further concern of social support agencies is that accommodation camps have the potential to be isolated during the wet season and limit employees' access to services (if they are provided locally) which may cause anxiety and stress. QPS also identified the potential for the mine activity to increase undesirable activities such as gangs, prostitution and drug use.

Available crime statistics do not point to significantly higher crime levels in areas impacted by mining and non-resident workforces and it is not anticipated this will occur for the Project either, particularly given the proposed workforce accommodation strategy. However, it is also recognised that the presence of a largely male, non-resident workforce can generally lead to a reduced sense of security and comfort for local residents, particularly women and older residents who may feel more vulnerable.

The mine site is relatively remote from local communities, along with several of the rail camps. Workers for the mine and two of the rail camps are to be flown directly from a FIFO base to the mine site and bussed to the camps resulting in no opportunity for workers to enter local communities and engage in antisocial or criminal behaviour. All workers, including contractors will be required to abide with a Code of Conduct regarding behaviour.

Table 3-10 shows the impacts on community values and change.

Table 3-10 Impacts on Community Values and Change

Impact	Timing	Likelihood	Consequence	L/C Rating	Impacted party	Status of Impact
Mine						
Increased crime and antisocial behaviour within the local communities from the FIFO workforce	Construction and operation	Unlikely	Moderate	**Low**	Local communities	Negative
Rail						
Increased crime and antisocial behaviour within the local communities from the construction workforce	Construction	Unlikely	Moderate	**Low**	Local communities	Negative

3.4 Summary

The Galilee Basin is at present dominated by pastoral farming serviced by a number of towns with long histories of settlement. With a number of mines proposed in the northern Galilee area in proximity to Clermont, including Adani, Macmines, Vale and Resolve, the landscape of the area has the potential to change considerably in the coming years. Some of the largest coal mines in Australia are proposed to be developed within the Galilee Basin.

This Project has the potential to provide a substantial economic contribution to the local, district, regional, state and national economy through employment, population growth, business growth, and increase in incomes. There is also considerable potential for substantial contribution to the local communities within the area, particularly Clermont. The challenge is to balance these considerable economic and community benefits with potential adverse effects from increased traffic, potential higher costs of living in local areas, an ever expanding gap between those employed in the mining

sector and those who are not (the 'two-speed' economy), pressures on emergency and social services and impacts on pastoral farming activities, many of which are multi-generational businesses. Adani has developed a number of management and mitigation measures and made several commitments in order to address both the positive and negative potential impacts of the Project. These measures need to be carefully developed in collaboration with many other organisations, agencies and individuals. Some of these measures include:

- Recruitment and training programs that address skills shortages and sustainably maintain a reliable, skilled workforce, and address potential hurdles to traditionally under-represented groups joining the mining industry
- Development of a Local Industry Participation Plan that complies with Adanis' Local Buying Policy and maximises opportunities for businesses in the district and regional areas to provide goods and services to the project
- Development of a Workforce Management Plan that includes a comprehensive employee induction programme addressing, among other things, a Code of Conduct for Employees and contractors regarding behaviour, alcohol and drug use, cultural awareness and safety.
- Development of a Housing and Accommodation Strategy that provides a workers accommodation village and temporary construction camps for the construction and operations workforce and responds to housing and accommodation issues in local and regional communities
- Provision of medical, security and fire fighting services to minimise additional pressure on emergency services and proactive engagement with emergency services in relation to emergency response planning along with provision of information required to allow forward planning by emergency services.
- Entering into a road maintenance and management agreement with IRC for the upgrade and maintenance of local roads, along with agreements with DTMR regarding state controlled roads and intersections.
- Working collaboratively with IRC and other representative bodies, such as the Clermont Preferred Futures Group, to provide strategic direction and investment for whole of community benefit, including establishing a community fund providing financial support targeting community activities, capacity and services.

Further detail regarding management and mitigation measures is presented in Section 4 which provides a summary of the Social Impact Management Plan.