Appendix M

Social Impact Assessment and Social Impact Management Plan

PACIFIC ALUMINIUM

Katherine to Gove Gas Pipeline

Social Impact Assessment

CONTENTS

Figures

Tables

ACRONYMS AND ABBREVIATIONS

AAGR	Average Annual Growth Rate
AAPA	Aboriginal Areas Protection Authority
ABS	Australian Bureau of Statistics
CSG	Coal Seam Gas
ECI	Early Contractor Involvement
EIS	Environmental Impact Statement
ERP	Estimated Resident Population
DEEWR	Department of Education, Employment and Workplace Relations
DIDO	Drive-In-Drive-Out
FID	Financial Investment Decision
FIFO	Fly-In-Fly-Out
FTE	Full Time Equivalent
ILOC	Indigenous Location
KGGP	Katherine to Gove Gas Pipeline
LIPP	Local Industry Participation Plan
LNG	Liquefied Natural Gas
LOTE	Language Other than English
NLC	Northern Land Council
NTP	Notice to Proceed
NT	Northern Territory
RAAF	Royal Australian Air Force
RITA	Recent Industry Turnover Analysis
ROW	Right of Way
SA2	Statistical Area Level 2
SEIFA	Socio-Economic Indices for Areas
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan
SLA	Statistical Local Area
SLJV	Spiecapag Lucas Joint Venture
STD	Sexually Transmitted Disease
TTP	Trans Territory Pipeline
UCL	Urban Centre Locality

1 INTRODUCTION

1.1 Project Summary

Pacific Aluminium (Alcan Gove Pty Limited) proposes to construct a natural gas pipeline to its bauxite mine and alumina refinery at Gove, in north east Arnhem Land, Northern Territory. The pipeline is proposed to commence approximately 20 km south of Katherine, at a tie-in point on the Amadeus Gas Pipeline, and follow a north easterly route for approximately 600 km to the existing Pacific Aluminium alumina refinery at Gove.

The Katherine to Gove Gas Pipeline (KGGP) will run parallel to the unsealed Central Arnhem Road for most of its length and aligns closely with a 600 km section of the earlier proposed Trans Territory Pipeline (TTP) Project. The TTP Project proposed to transport gas from the Eni Wadeye facility, on the west coast of the Northern Territory, via a 940 km pipeline to the Gove facility. However, the TTP Project did not proceed, and in 2008 the 278 km Bonaparte Gas pipeline was constructed to transport gas from the Eni Wadeye facility to a tie-in point on the Amadeus pipeline at Ban Ban Springs. It is anticipated that the Bonaparte Gas pipeline will supply most of the gas to the KGGP. This gas will predominantly be from the Eni Blacktip field with a proportion from the Santos field in central Australia.

The pipeline will consist of a buried high-tensile steel pipe constructed within an approved 30 m wide construction corridor, which will be located in a 100 m wide pipeline corridor. At intervals along the pipeline, supporting infrastructure including five main line valves, three scraper stations, and one compressor station will be established.

The need for the pipeline was confirmed during a strategic review of the Gove operation in 2012, led by Rio Tinto, the parent company of Pacific Aluminium. The Gove refinery is currently reliant on heavy fuel oil as a source of energy, impacting the financial performance of the operation. The commercial reality was that, without an affordable long term energy option, consideration had to be given to suspending refinery activities until an affordable energy option could be sourced, or until economic conditions improved.

An assessment of the socio-economic impacts of closing the refinery, halting operations indefinitely, or sourcing an alternative energy supply, was undertaken as part of the strategic review. Key findings indicated that sourcing an alternative energy source and subsequently ensuring the continued operation of the refinery was the option likely to result in the most positive socio-economic outcomes.

1.2 SIA Methodology

The SIA for this Project has been undertaken in line with Pacific Aluminium's *Scope of Work for the Social Impact Assessment of the Katherine to Gove Gas Pipeline* and Northern Territory regulatory requirements, specifically the *Environmental Assessment Act (1982)*. The SIA has been structured to align with the Environmental Protection Authority's *Final Guidelines for Preparation of an Environmental Impact Statement for the Katherine to Gove Gas Pipeline* (January 2013).

Given the short-term construction time frame of the Project, and relatively small operations workforce, the SIA has largely focused on impacts predicted to occur during construction, unless an impact is long term in nature or specific to the operation of the pipeline.

1.2.1 Desktop analysis

The development of the SIA for this Project involved an analysis of the existing social environment, to identify current trends and core issues. This involved:

- An assessment of demographic data to identify key characteristics of the study area, social infrastructure and services. For each demographic aspect the most recent data set has been used. Primary data sources included:
    - The Australian Bureau of Statistics (ABS) - Census of Population and Housing (2011) and other ABS data sources.
    - Northern Territory Government data including from the Department of the Attorney General and Justice, Research and Statistics Unit and the Department of Treasury and Finance.
    - Data gathered through consultation with key government agencies and local service providers.
- Consideration of community issues and assessment of social values and lifestyles through analysing existing data, consultation undertaken for the Project, and local and regional planning documents.
- Identifying potential social issues and regional communities through analysing the outcomes of previous community consultation and existing reports.
- Undertaking targeted stakeholder engagement with key agencies and group representatives to understand local and regional dynamics and identify potential social impacts and possible mitigation strategies (described in detail in Section 1.2.2).
- Assessing potential social impacts and opportunities, both real and perceived, that could occur during both the Project construction and operations phases. This included analysing the effects on local communities, landholders, the Project workforce, social infrastructure and community values.
- Rating and ranking identified impacts and opportunities through a tailored scoring tool to understand the overall magnitude and significance of each issue and tailor impact management strategies accordingly.
- Developing mitigation and management measures to enhance Project opportunities and minimise potential impacts for the local communities. These measures are aligned with regional planning initiatives to maximise outcomes for communities.

1.2.2 Stakeholder consultation

During the development of the SIA for the TTP Project, extensive consultation was undertaken with a wide range of stakeholders, including community organisations and Traditional Owners located along the KGGP pipeline route. The output from the studies at that time has formed a component of the desktop review for this work..

Consultations specific to the SIA for the KGGP Project were undertaken with a number of stakeholders immediately after the Northern Territory Government confirmed its commitment to supply gas. SIA consultations occurred in February, March and April 2013. The purpose of these consultations was to:

- Provide details of the proposed KGGP Project.

- Verify baseline data and identify local values, attitudes and aspirations.
- Identify potential impacts or opportunities associated with the Project.
- Gain input into the development of potential mitigation strategies, and identify where local capacity and capability may exist to participate in the implementation of these strategies.

Consultations were undertaken with Northern Territory, local government, and selected community stakeholders, and, as much of the land affected by the KGGP Project is Aboriginal Land Trust Land. Due to a large percentage (71%) of the proposed route being Aboriginal land, Pacific Aluminium has met regularly with the Northern Land Council (NLC) in relation to the Project. To assist Pacific Aluminium with internal approvals, the NLC arranged for two meetings in Nhulunbuy and Beswick with Traditional Owners of the proposed route to discuss the possibility of further meetings about the Project in early 2013 if gas could be secured. The Traditional Owners informed Pacific Aluminium if gas could be secured ongoing consultations could occur.

Through this consultation, the Project was able to gain an understanding of current socio-economic issues and concerns across the study area as well as overall stakeholder response to the Project. The issues and opportunities raised by these stakeholders have been incorporated throughout the body of this report, and a summary of key issues and stakeholder sentiment is provided at Table 1-1.

The benefit associated with the existing refinery remaining viable was raised strongly by most stakeholder groups, who felt that this would be a significant positive impact for local communities and the broader regional economy. The most commonly raised concerns included issues around unauthorised access to traditional lands, and potential impacts on social values and community cohesion associated with a non-local workforce if appropriate codes of conduct are not enforced.

Consultation for the continuing social impact and supplementary process will be ongoing between April and July 2013 as part of the broader EIS process, and will include Traditional Owner and community groups to ensure that a wide range of perspectives are recorded and included in the development of management plans. This consultation will be arranged and undertaken in close partnership with the NLC.

Table 1-1 Stakeholder Issues Summary

Stakeholder/s	Primary Issues and Sentiment
Australian Government	• Overall support for the pipeline and the ongoing future of the refinery. • Seeking assurance the Project will not impact on Australian Defence Force infrastructure and operations. • Environmental impacts. • Employment and economic impacts in north east Arnhem region • Indigenous employment opportunities.
Northern Territory Government	• Overall support for the pipeline and the ongoing future of the refinery. • Environmental impacts. • Recommended that the Project needs to be as self-sufficient as possible in terms of management of total workforce health issues. • Heritage and sacred site protection. • Concerns with road maintenance. • Opportunities for local employment and procurement including Indigenous opportunities. • Future socio economic viability of north-east Arnhem Land. • Concern that local health facilities are ill-equipped to deal with significant increases in demand.
Local government / shire councils	• Overall support for the pipeline and the ongoing future of the refinery. • Need for the Project to consider how it will prevent exacerbation of substance abuse issue. • Need to manage construction workforce behaviour. • Some capacity within local councils to tender for civil works. • Need to manage expectations of local business around direct and indirect business opportunities. • Potential for the Project to impact on housing affordability and availability. • Concerns around potential impacts on existing road infrastructure. • Proposed re-initiation of the Mt Todd mine (Oct 2013) may have some cumulative impacts with the Project, especially in terms of housing and infrastructure provision.
Indigenous organisations	• The Project should work to maximise Aboriginal participation in the Project – both directly through employment and indirectly through the formation of an Aboriginal JV to undertake ancillary Project activities. • Important for the Project to communicate contract opportunities early so that the business community can position itself. • Request for information, including visuals, on what the project will look like during and post construction and having environmental consultants on hand to demonstrate surveying equipment and techniques. • Concern that the capacity of the local community to take advantage of Project opportunities may be low. The Project will need to assist people in participating.
Community organisations	• Emphasis on the requirement for early engagement around the Project. • Value the importance of continuing to operate the refinery so that the financial burden does not fall to local taxpayers. • View that gas should be considered only as a transitional energy source for the refinery until a renewable energy source could be identified and secured. • Concern that inadequate carbon emissions savings would be achieved by the conversion to gas.
Primary contractors	• Discussed options for local employment and procurement. • Discussed contractor plans for health and safety management, including emergency management. • Barriers to achieving local content have been experienced on similar projects in similar areas, particularly in relation to local business capacity and community motivation to accept employment conditions such as full-time and FIFO arrangements.

Where relevant, this SIA has also incorporated information gathered from stakeholders by Pacific Aluminium during the development of the Environmental Impact Statement (EIS).

During the development of the supplementary EIS, further consultation will be held with government stakeholders, social service providers and key community representatives. This consultation will be undertaken to verify key issues and impacts, and validate proposed management and mitigation strategies.

1.2.3 Defined research boundaries

The SIA study area has been identified based on the proposed pipeline route and was confirmed in consultation with Pacific Aluminium. The proposed route traverses the Roper Gulf and East Arnhem Shire Councils, which have been considered in the SIA for regional planning and management purposes (Figure 1-1).

The SIA has focused on the two ABS Urban Centre Localities (UCL) of Katherine and Nhulunbuy, located at either end of the pipeline, as these two communities are most likely to provide support to the Project in terms of resources and services. Pacific Aluminium's existing refinery is also located in Nhulunbuy.

At a broader level, the Katherine, Elsey and East Arnhem ABS Statistical Area Level 2s (SA2s) have been included in the study area, as the proposed pipeline route will traverse these regions. Due to the remote and rural nature of much of the pipeline route, the inclusion of the wider SA2s assists in providing context to the socio-economic conditions outside the localities of Katherine and Nhulunbuy.

More specific community-level data has also been provided in order to profile communities along the pipeline route.

The Project location and ABS statistical boundaries applied throughout the SIA, particularly in the baseline assessment, are outlined in Table 1-2.

Table 1-2 Study Area Definitions

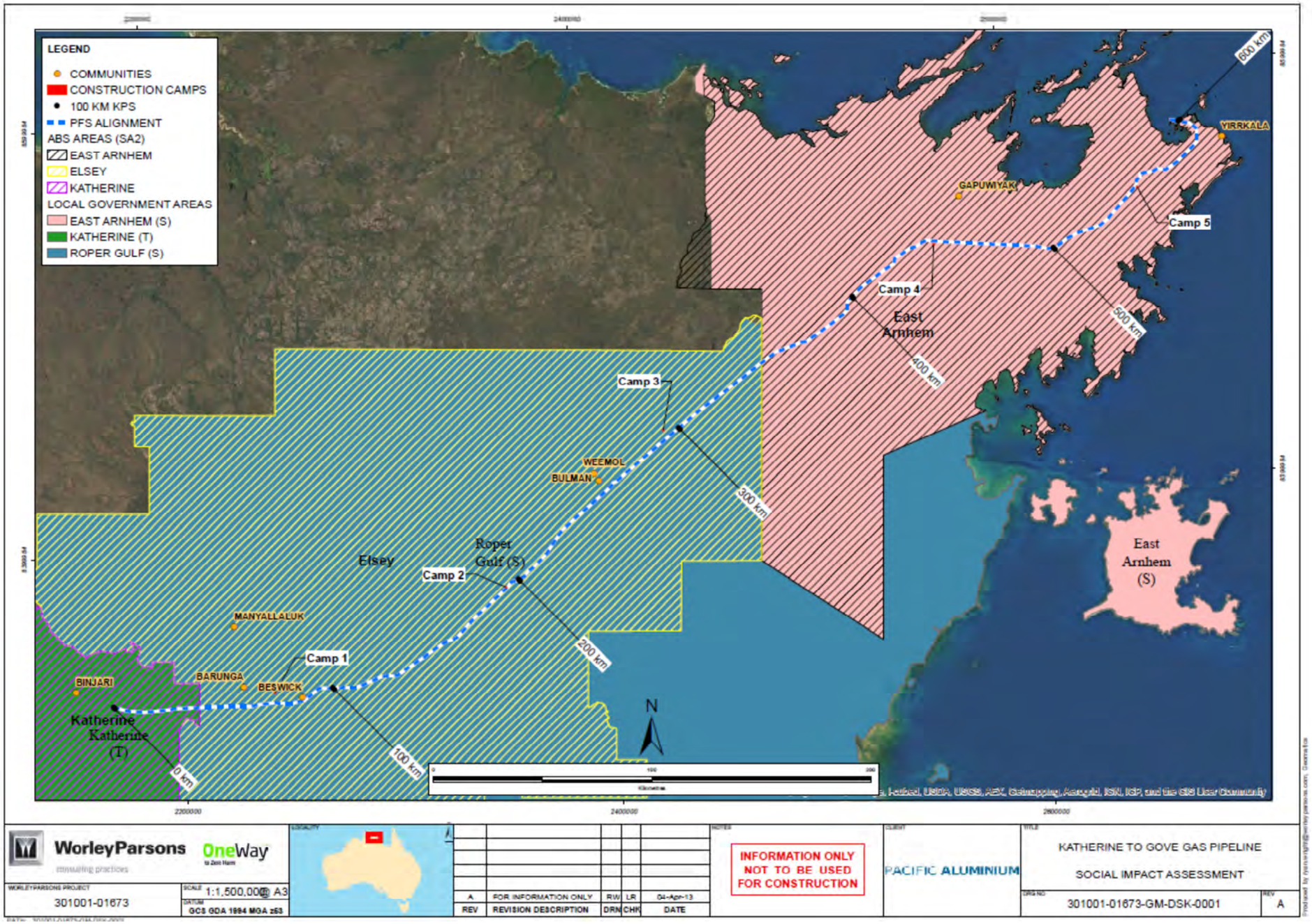
Area	Definition

Community / local communities	Communities at either end of the pipeline or located along the proposed pipeline route including:
	• The regional centres of Katherine and Nhulunbuy UCL
	• The regional communities located along proposed pipeline route, defined by ABS boundaries:
	  • Rockhole Indigenous Location (near Katherine)
	  • Barunga (Bamyili) (east of Katherine) Urban Centre Locality
	  • Bulman-Weemol (centre of proposed route) Urban Centre Locality
	  • Wugular- Beswick Urban Centre Locality
	  • Manyalluluk (east of Katherine) Indigenous Location
	  • Binjari (adjacent to Katherine) Urban Centre Locality
	  • Yirrkala (south of Nhulunbuy) Urban Centre Locality
	  • Gapuwiyak (north of Nhulunbuy) Urban Centre Locality

Urban Centre Localities*	ABS Urban Centre Localities of Nhulunbuy and Katherine
Statistical Area Level 2	Elsey SA2 Katherine SA2 East Arnhem SA2
Local government area	Roper Gulf Shire Council East Arnhem Shire Council Nhulunbuy Corporation Limited Katherine Town Council
Territory	Northern Territory
National	Commonwealth of Australia

* ABS statistical area classification.

Figure 1-1 Study Area Regional Setting



WorleyParsons OneWay

WORLEYPARSONS PROJECT	SCALE	DATUM
301001-01673	1:1,500,000 @ A3	GCS GDA 1994 MGA z53

REV	REVISION DESCRIPTION	DRN	CHK	DATE
A	FOR INFORMATION ONLY	RW	LR	04-Apr-13

INFORMATION ONLY NOT TO BE USED FOR CONSTRUCTION

PACIFIC ALUMINIUM

KATHERINE TO GOVE GAS PIPELINE

SOCIAL IMPACT ASSESSMENT

DRG NO	REV
301001-01673-GM-DSK-0001	A

1.2.1 Methodology limitations

As per the EIS guidelines an historical research and desktop analysis of relevant material including the TTP Project SIA was undertaken. Two detailed meetings with Traditional Owners were held in early December 2012 to seek sentiment on the Project and strong support was communicated from the Traditional Owners to Pacific Aluminium. The NLC has engaged with Traditional Owners on behalf of Pacific Aluminium and provided feedback to Pacific Aluminium to prepare for community consultations. Due to cultural activities and access to land, consultations with Traditional Owners will be guided by the NLC as per the *Aboriginal Land Rights Act.* Pacific Aluminium and the NLC have scheduled consultations for early April 2013 and will continue the negotiations throughout the EIS process.

At the request of the NLC, SIA-specific consultations have not yet been undertaken with Traditional Owners and communities located along the pipeline route.

This remains a gap in the current SIA. However, these consultations are scheduled to occur before and/or during the supplementary process. The findings of these consultations will then be incorporated into the final SIA to be submitted with the Supplementary EIS.

1.3 Workforce and Accommodation

1.3.1 Construction workforce numbers

Construction for the Project will likely be undertaken during the dry season in 2014 with some early works possibly occuring in late 2013 should statutory approvals and weather conditions permit. A Full Time Equivalent (FTE) onsite construction workforce of approximately 780 workers will be employed for the Project (Table 1-3). Construction activities are expected to ramp up in March 2014, and will peak between May and October 2014.

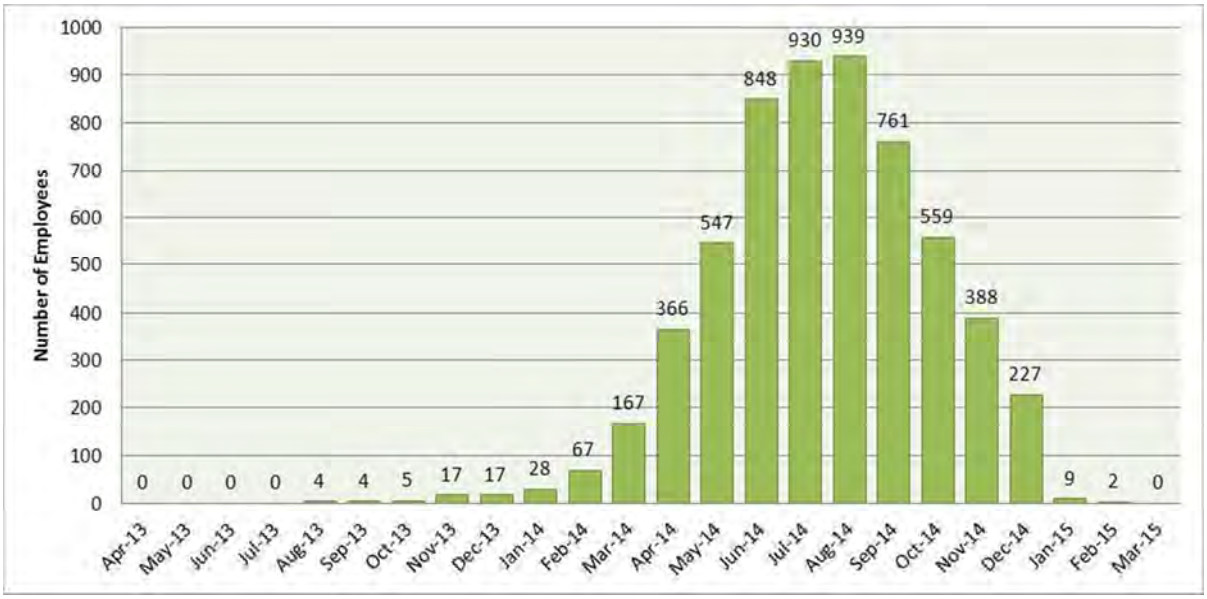
Figure 1-2 provides a histogram of the month- by- month workforce breakdown, while Table 1-4 provides an overview of the required resources and activities at each stage of construction.

The Project construction workforce will likely work a 28-day-on, 9-day-off Fly-In Fly-Out (FIFO) roster, and it is anticipated that FIFO arrangements for each of the two pipeline construction spreads may be staggered for logistical purposes.

Table 1-3 Construction Workforce Profile

Labour Category	Number of Personnel
Project management, engineers and administration	50
HSEQ and land access	60
Plant operators	150
Drivers	140
Welders, trade assistants, pipe fitters and mechanics	100
Pipeline labourers	280
Total onsite personnel	**780**
Excludes off site personnel, off site specialised subcontractors and head office support etc.	140

Source: Katherine to Gove Gas Pipeline Pre-Feasibility Study Pipeline Pre-Feasibility Study Report, 2013



Source: Pacific Aluminium, 2013

Figure 1-2 Workforce Profile - Construction

Table 1-4 Construction Timeframes and Workforce

Time Period	Work Undertaken	Number of Staff (on- and off-site)
Feasibility, Early Contractor Involvement (ECI) and pre-commitments from March 2013 to November 2014	ECI, Construction planning, action approved pre- commitments, detailed site surveys and investigations to mitigate key risks and to capitalise on opportunities	30
Early Works are desired from November 2013 to March 2014 (Project FID and Pipeline Construction Notice to Proceed (NTP) for Early Works to be issued Nov 2013)	Build first two construction camps and pipe stockpiles near Katherine and Gove areas, receive first pipe ship in Darwin and in Gove, commence mobilisation and Pipe haulage and supply chain to Katherine and Gove areas.	150
Commencement of Pipeline survey set out, Clear and Grade ROW and completion of mobilisation from April 2014 to May 2014, after NTP 01 April 14	ROW survey set out, commence Clear and Grade of ROW, access tracks, and complete mobilization	500
June 2014 to October 2014	All pipeline construction activities underway	920
November 2014 to December 2014	Completion of pipeline hydrostatic testing, pre-commissioning, final clean up, assist Owner with gas commissioning and project demobilisation	300

Source: Katherine to Gove Gas Pipeline Pre-Feasibility Study Pipeline Pre-Feasibility Study Report, 2013

1.3.2 Operations workforce numbers

The pipeline coating, above ground pipe work, equipment and fittings will be designed for an operational life of 50 years. It is anticipated that only a small number of personnel (approximately 10 employees) will be required to operate and maintain the pipeline and supporting infrastructure, and respond to emergencies and alarm conditions. This workforce will be provided by a contracted operations and maintenance service provider.

Operations and maintenance staffing and rosters will be determined by the timing of scheduled maintenance activities, which will consider wet season limitations.

1.3.3 Workforce accommodation and transport

Due to the specialised nature of the skills required for the Project, and the limited skilled local labour pool, it is likely that the construction workforce will largely be sourced from outside the immediate Project area. It is anticipated that the majority of the construction workforce (750-800 people) will be housed in five construction camps along the pipeline route. The existing Pacific Aluminium construction camp at Gove will also be utilised. Short-term accommodation for consultant / contractor workers may also need to be sourced in Katherine.

The proposed camp site locations were selected based on the logistics of pipeline construction, and are subject to statutory and landowner approvals, distance from dwellings or stock (to minimise noise, dust and visual aspects), suitable terrain, access, environmental constraints and water availability. Camps are proposed to be located in close proximity to the Central Arnhem road, and. indicative locations are shown in Figure 1-1.

It is expected that the construction workforce will be flown into Gove or Katherine from Australian capital cities. From Katherine or Gove they will be transported to site via buses, 4WD vehicles and small charter flights. It is anticipated that all operations positions will be residential positions (i.e. not FIFO) and that these workers will be sourced from the existing labour pool in Katherine or Nhulunbuy.

1.3.4 Labour supply

Australia is currently experiencing significant growth in the resources sector, particularly in Western Australia and Queensland. In Queensland alone, there are a number of pipeline projects underway, including three large Coal Seam Gas (CSG) to Liquefied Natural Gas (LNG) Projects. At the time of the KGGP pre-feasibility assessment in February 2013, it was not expected that these projects or any other pipeline projects would impact on specialised pipeline labour availability for the Project. However, this may change if these projects are delayed or extended. The successful pipeline contractor, Spiecapag Lucas Joint Venture (SLJV) also has a significant permanent resource of key pipeline construction personnel and a comprehensive workforce database of pipelining personnel, reducing potential supply issues for key technical personnel required during construction.

During the ECI phase, the Project intends to develop a Local Employment Plan and Local Procurement Plan. The Project will further review potential workforce candidates from the local area, including analysing existing skills and training requirements to identify and understand any potential labour supply issues or opportunities.

At the local community level, the total labour force of Nhulunbuy and Katherine in 2011 was 5,568 people. Within these two locations, 244 people were unemployed, which means there may be some opportunities for the local labour force to gain construction employment with the Project. In Nhulunbuy and Katherine, 378 workers were employed in construction-related occupations, suggesting that the skills for construction projects may be available locally, although currently contained in other projects or industries.

At the SA2 level, which includes the smaller, regional communities located along the pipeline route, the total labour force was 7,217 people in 2011. Across these regions, a total of 808 people (or 11.2% of the labour force) were unemployed and 4,598 people had achieved a Level 4 or 5 skills qualification, which equates to at least a Grade 12 completion or Certificate Level I or II. As a result, there is potentially a local labour pool for unskilled or semi-skilled jobs.

The study area also has a large number of under-represented groups (e.g. Indigenous people, females, people with a disability) which may benefit from opportunities with the Project (Table 1-5). Young persons, aged 15-19 years, and those with lower levels of education are also a potentially untapped labour source for the Project. However, given the timeline and short-term duration of Project construction, early and targeted training programs would need to be implemented to enable a level of employment opportunity for these groups.

Table 1-5 Study Area Labour Supply and Under-Represented Groups, 2011

Locality	Nhulunbuy and Katherine UCL	Elsey SA2	Katherine SA2	East Arnhem SA2
Labour Supply				
Total labour force	5,568	1,199	2,378	3,640
Unemployed	244	111	299	398
Skills Level 4/5 Qualified	2,541	622	2,952	1,024
Employed in construction	378	28	297	81
Under-represented Groups				
Indigenous persons	2,086	1,565	2,378	6,696
Females	5,458	1,526	5,309	3,736
Persons with a disability	279	109	321	269
Teenage labour (15 – 19 y)	564	151	558	674
< Grade 8 education	266	236	625	1,259

Note: Skills Level 4/5 Qualified includes population with Year 12 education as well as those with Certificate I or II.

Source: ABS Census of Population and Housing, 2011

1.3.5 Attraction and retention

Although it is not likely that other pipeline projects will impact on specialised pipeline labour availability for the Project, the strong resources sector growth across Australia means there is strong competition for labour. A recent Resources Industry Turnover Analysis (RITA) report indicated that the rate of resource sector turnover has remained consistent at approximately 19% per annum since 2011, with a slight upward trend of turnover among professional and technical staff recorded in the past year (Elliot, 2012).

In the context of this environment, and to attract and retain an appropriate and specialised pipeline construction workforce, the Project will:

- Review the advantages and disadvantages of a structured workforce productivity bonus in addition to a project completion bonus.
- Review skills required and opportunities to train local workers, particularly for labouring type positions, such as road maintenance, and catering services.
- Engage with specialist subcontractors, prior to construction.
- Consider the use and extent of a FIFO workforce.

The Project will further develop a Local Employment Plan which will outline:

- Key skills required and positions that may be able to be filled by local and under-represented groups.
- Internal recruitment policies and procedures.
- Contractor requirements.
- Short-term and tailored training and employment initiatives, to increase employment opportunities overall and for targeted groups, such as local and Aboriginal people.

The operations workforce will be sourced through the contracted service provider's own internal recruitment procedures.

1.3.6 Training and development

Wherever possible, Pacific Aluminium is committed to creating opportunities for training and development of youth, low income earners, unemployed people, people with a disability, Indigenous groups, women, and people who speak a language other than English. Training initiatives of this focus are currently ongoing at Pacific Aluminium's Gove operations through a local Indigenous Training Program.

The KGGP Project will develop a Local Employment Plan and a Local Procurement Plan, and will also review potential workforce candidates from the local area including analysing existing skills and training requirements to identify and understand any potential labour supply issues or opportunities.

Within the context of a highly specialised workforce that will most likely need to be brought in for the project,, Pacific Aluminium will investigate short-term and targeted training opportunities to capacitate local and Aboriginal people to access construction opportunities at the KGGP Project (discussed in detail in Section 3.3.1). This will be done through the existing Indigenous Training Program, and in conjunction with key local stakeholders and contractors on the Project.

1.4 Social Amenity and Use of the Study Area

1.4.1 Land use

The proposed pipeline route is predominantly located on Aboriginal Land Trust Land, across the Local Government Areas of East Arnhem Shire Council, the Roper Gulf Shire Council, the Katherine Town Council, and Nhulunbuy Corporation. Land use across the Project area is a mix of pastoral farming, mining and tourism uses.

Land owned by an Aboriginal Land Trust is private land, and persons wishing to enter the area must seek permission from the landowners. Any prospective commercial developments must also seek landowner permission and negotiate all arrangements, including financial arrangements, with the landowners.

The East Arnhem Shire Council covers an area of approximately 33,359 km^2 and provides local government services to nine communities, i.e.: Milingimbi, Ramingining, Galiwin'ku, Gapuwiyak, Yirrkala, Gunyangara, Umbakumba, Angurugu and Milyakburra. Five of these communities are located on islands, and two are within close proximity to Nhulunbuy (Yirrkala and Galiwinku).

The Roper Gulf Shire Council covers an area of approximately 185,176 km^2 and comprises five wards (i.e. Never Never, Numbulwar, Numburindi, Nyirranggulung, South West Gulf) and 11 communities (Barunga, Borroloola, Bulman, Jilkminggan, Manyallalak, Mataranka, Minyerri, Ngukurr, Numulwarr, Robinson River, Wugularr). The Shire Council has a number of pastoral stations, and some former pastoral stations which have since been reclaimed by traditional Aboriginal owners through the lands claims processes. Tourism is a growing industry in the Shire, particularly smaller-scale cultural tourism. Significant portions of the Shire are owned by Aboriginal Land Trusts.

The township of Katherine serves both as a service centre and a tourist centre and there are a number of pastoral stations surrounding the town. The Tindal Royal Australian Airforce (RAAF) base is located 15 km south of Katherine, and its staff and accompanying families make up almost 25% of Katherine's population.[1]

The mining operations and township of Nhulunbuy is located on Aboriginal land, its tenure granted via a Special Mineral Lease and Special Purposes Leases. Nhulunbuy is a company-managed town, and is largely a service centre to the Gove bauxite mine, alumina refinery and support industries. A number of local government services are also located in Nhulunbuy and the town serves as a regional hub for communities in north-east Arnhem Land.

The area between Katherine and Nhulunbuy is sparsely populated apart from a number of small, predominantly Aboriginal, communities located along, or near, the Central Arnhem Road.

1.4.2 Social amenity, values and aspirations

Katherine and Nhulunbuy

Katherine and Nhulunbuy, situated at opposite ends of the proposed pipeline route, are the larger population centres within the study area, with higher median incomes and education levels than other smaller communities along the pipeline route (Table 1-6). Both towns function as regional service centres, with a range of government services, such as health and education, located in these towns.

Nhulunbuy Township is governed by the Nhulunbuy Corporation Limited and was first established to service the bauxite mine in the 1960s. While it is essentially a 'mining town', it has grown to also function as a regional service centre, as mentioned above. These regional services support outlying communities.

The population of Nhulunbuy is predominantly non-Indigenous and median household incomes are significantly higher than reported elsewhere in the study area. With the population and viability of the town inextricably linked to existing industry, including the refinery, anecdotal evidence indicates that the local population, particularly the local business community, felt vulnerable as the future of the refinery became uncertain. While the future is now less uncertain, the township is still facing some challenges in terms of growth. This can be linked to the fact that the ongoing operation of the refinery is likely to sustain existing population levels, but significant growth of the industry has not been projected.

Katherine has a more diverse industrial and population base than Nhulunbuy. Tourism is a significant industry for Katherine and the Australian Government's Tindal Royal Australian Air Force Base has been operating in the area since 1988 (although there were existing air force operations there prior to the base officially opening). Many government services are based in Katherine and service provision extends from the Western Australian border to the north-east of the Territory.

The Katherine Town Council is looking to establish the town as a key service centre for the mining industry. Steps are being taken to accommodate projected population growth,

[1] http://www.airforce.gov.au/Bases/Northern_Territory/RAAF_Base_Tindal/?RAAF-hHBYVzFK6EsZI++TiITQwfB6YNnQZ/Lc viewed February 28, 2013

including the release of land for housing developments and to ensure that services, such as emergency and health services, are prepared and able to expand as required.

Communities along the pipeline

Consultations with communities along the pipeline route are scheduled to be undertaken in early April 2013 (Section 1.1.1). In 2004, extensive community consultation was undertaken along the proposed pipeline route as part of an SIA process for the proposed TTP Project. The TTP Project did not eventuate and this KGGP Project is the first major infrastructure project to be proposed in the area since 2004.

An understanding of the social amenity, social values and aspirations of communities along the pipeline route has been identified from the outcomes of SIA-specific consultations undertaken for the KGGP Project. Local government goals and objectives, as outlined in the relevant planning documents (Section 1.4.3) have also informed this section.

Outside of the town centres of Katherine and Nhulunbuy, communities along the proposed pipeline route are small, remotely located, and predominantly Indigenous. The populations of these communities are young, with the median age of communities ranging between 21 and 27 years. Education levels are low and unemployment levels are high. These demographic characteristics (and Table 1-7) indicate low levels of social amenity, and a high likelihood that aspirations or expectations of the Project in terms of improving social amenity will be high.

Employment opportunities are limited in many of these communities, and employment aspirations in relation to the Project are likely to be high. Both communities and the SIA consultants identified the need for clear and factual information, provided in the local language, on issues such as potential employment to be provided.

Barriers to employment were also cited during KGGP-specific consultations. These included limited capacity within local communities in terms of required skillsets and an unwillingness or inability for individuals to be away from their communities for extended periods as is required on a FIFO / DIDO rosters.

Natural and cultural resources hold significant value to these communities, particularly in relation to sacred sites and traditional lands. Traditional practices are valued highly and the likely impact of any development on the ability of communities to participate in traditional practices, such as traditional burning practices, can cause serious concern amongst these communities.

Ensuring the safety and wellbeing of community members is of importance, particularly in terms of avoiding an increase in traffic-related risk, and social problems associated with drugs and alcohol. KGGP consultations to date indicated that substance issues were significant, existing issues and concerns that the Project would result in an exacerbation of these issues were prevalent. The potential for an increase in the incidence of domestic violence as a result of conflicts relating to interactions with the workforce, or due to disagreements on the allocation of any potential compensation arrangements was also raised.

Concerns around the dangers associated with health impacts of gas, particularly the risk of explosion, were also often raised.

Community, Shire and Regional Council planning documents indicate that improved health, education and economic indicators for all communities were a priority. Child health and the

health of the aged featured prominently; as did ensuring that cultural heritage was protected and upheld. Economic development was highlighted as key to achieving all social indicators, particularly in relation to employment and business development opportunities. Ensuring access to safe and affordable housing was also an objective common to the Project area, as was overall community safety.

Table 1-6 Key Characteristics of the Study Area, 2011

Characteristic	Katherine UCL	Nhulunbuy UCL	Elsey SA2	Katherine SA2	East Arnhem SA2	Northern Territory
Population	6,998	4,287	3,042	10,719	7,488	234,422
Average age	34	33	35	36	25	33
Indigenous population	26.3%	6.5%	52.9%	22.5%	89.5%	24.8%
People per household	2.7	2.9	4.1	2.7	5.4	2.9
Grade 12 completion	36.5%	48%	24.9%	35.2%	19%	34.9%
No schooling	0.9%	0.4%	2.0%	1.1%	5.8%	1.4%
Need for assistance	3.3%	1.1%	3.6%	3%	3.6%	2.7%
Unemployment Rate	4%	1.7%	5.5%	4.1%	8.1%	5.1%
Median weekly household income	$1,403	$2,565	$938	$1,427	$1,458	$1,608
Average weekly rent	$185	$3*	$60	$200	$40	$224

Source: ABS Census of Population and Housing, 2011

*Figure low due to high proportion of employer-provided accommodation.

Table 1-7 Key Characteristics of Communities Located on Pipeline Route

Characteristic	Rockhole ILOC	Barunga (Bamyili) UCL	Bulman-Weemol UCL	Wulgular-Beswick UCL	Manyalluluk ILOC	Binjari UCL	Yirrkala UCL	Gapuwiyak UCL	Northern Territory
Population	143	309	262	549	105	216	856	889	234,422
Average age	15/27*	24	24	22	21	24	27	25	33
Indigenous population	89.5%	86.4%	90.1%	96.1%	100%	100%	75.2%	91.6%	24.8%
People per household	5.7	4.3	4.4	5.8	7.0	5.3	4.7	6.2	2.9
Grade 12 completion	10%	20.3%	18.6%	12.6%	10.6%	6.2%	20.9%	12.1%	34.9%
No schooling	0%	0%	7%	7.5%	5.3%	18.6%	0%	17.5%	1.4%
Need for assistance	0%	2.9%	6.9%	2.2%	2.7%	5.5%	4.1%	4.3%	2.7%
Unemployment rate	9.1%	18.3%	8.9%	6.0%	28.9%	46.2%	2.1%	4.7%	5.1%
Median weekly household income	$553	$985	$774	$977	$1,666	$766	$1,799	$1,325	$1,608
Median weekly rent	$75	$60	$70	$60	$150	$68	$40	$25	$224

Source: ABS Census of Population and Housing, 2011

1.4.3 Regional planning framework

The section below provides a description of the regional planning framework applicable to the Project's study area. The visions, goals and objectives of local government agencies are important in the SIA process in that social impact management measures should aim to align with regional strategies and maximise synergies for communities.

1.4.3.1 NORTHERN LAND COUNCIL

The NLC is an independent statutory authority responsible for matters under the *Aboriginal Land Rights (Northern Territory) Act 1976* in the Top End of the Northern Territory. The NLC acts on behalf of traditional owners to conduct consultations and negotiations with those interested in carrying out commercial activities on Aboriginal land. The NLC is also the Native Title Representative Body for the Northern Region and is authorised to perform functions under Northern Territory law.

The Project's footprint falls completely within the NLC's regional boundaries.

1.4.3.2 REGIONAL COUNCIL PLANS

Regional Management Plans are a requirement under the NT *Local Government Act 1978* and are developed jointly between the relevant Regional Council and the Department of Local Government. The intention is that key local government issues are addressed through a regional approach. The Regional Management Plans also address resource sharing and regional development issues.

There are two Regional Management Plans relevant to the Project area. The *Northern Region Regional Management Plan July 2012 – June 2016* incorporates the East Arnhem Shire, while the *Big Rivers Region Regional Management Plan* includes the Roper Gulf Shire and the Katherine Town Council (to the extent agreed). The relevant regional goals as outlined in the Regional Management Plans are presented in Table 1-8.

Table 1-8 Relevant Regional Management Plan and Key Goals and Outcomes

Goal	Outcomes
Northern Region RMP July 2012 – June 2016	
To develop regional service delivery by improving technical and engineering services.	Improved quality of technical and engineering services are available to all participating local governments.
	Improved access to technical and engineering resources and equipment are available through the development of a cross hire policy.
Big Rivers Region RMP July 2012 – June 2016	
To explore joint tendering, procurement and asset management arrangements, policies and protocols.	Consistent treatment of infrastructure assets across the participating local governments for recognition, measurement, classification, disposal, depreciation treatment and reporting of asset categories.
	Councils are able to purchase goods and services at a reduced cost.

1.4.3.3 SHIRE PLANS

Each Northern Territory Shire Council is required to develop an annual Shire Plan that feeds into the relevant Regional Management Plan. The proposed pipeline route passes through

the Roper Gulf and East Arnhem Shire Councils. The goals and outcomes relevant to the social context of the Project have been extracted from these Shire Council plans and are outlined in Table 1-9.

The vision of the Roper Shire Council, as outlined in the *Roper Gulf Shire Plan 2012-2013* is:

> *"Roper Gulf Shire - sustainable, viable and vibrant"*

The vision of the East Arnhem Shire Council as outlined in the *East Arnhem Shire Council Strategic Plan 2012-2013* is to be:

> *"A recognised and respected leader in Local Government providing high quality services, sustainable employment and development for the people of East Arnhem Shire Council."*

Table 1-9 Relevant Shire Council Plans and Key Goals / Outcomes

Goal	Outcome
Roper Gulf Shire Plan 2012-2013	
Strengthening quality of life in our Shire.	The best nutrition, care and wellbeing services are being provided to our aged, disabled and children of crèche and primary school age.
	To increase the quality and number of services and activities which build community engagement, capacity, involvement and knowledge.
	Increased safety for women and children within townships.
Move towards sustainability.	To generate income from range of income producing commercial operations in order to support Shire services and infrastructure.
Improve our infrastructure.	All roads and roadside furniture within the Shire is managed in the most cost effective manner and to reduce occurrence of incidents, damage or accidents while maintaining access.
	All existing infrastructure and assets within the Shire are managed in the most cost effective manner to improve service.
East Arnhem Shire Council Strategic Plan 2012-2013	
GOVERNANCE - Strong Leadership, Effective Advocacy and Democracy.	Outcome 1.1: Increased community capacity and empowerment.
	Outcome 1.3: Proactive partnerships with government agencies and the private sector.
COMMUNITY & ECONOMY - A Safe, Healthy Community and Culture with a Growing Economy.	Outcome 4.1: Celebration and maintenance of historical and contemporary Indigenous and western culture and heritage.
	Outcome 4.2: Community services that are accessible and support the wellbeing of the community.
	Outcome 4.3: Increased opportunities for youth, sport and recreation.
	Outcome 4.4: Improved wellbeing of the aged and disabled.
	Outcome 4.5: Enhanced opportunities for local employment.
	Outcome 4.7: Safe and healthy communities.
	Outcome 4.13: 25% increase in Indigenous employment within social housing programs.

1.4.3.4 MUNICIPAL PLANS

Katherine Town Council

The Municipality of Katherine covers an area of 7,421 km^2 and is the fourth largest town in the Northern Territory. The *Katherine Town Council Municipal Plan 1 July 2012 – 30 June 2017* outlines the Council's strategic direction and the Katherine Town Council has voluntarily contributed to the development and implementation of the Roper Gulf Shire Regional Management Plan.

The vision of the Katherine Town Council is:

> *"For Katherine to be recognised as an innovative, vibrant and inclusive community."*

Specific goals relevant to the social context of the Project as outlined in the Municipal Plan are:

- **Community Development**: To provide, in partnership with other organisations, for the social, recreational and cultural needs of residents and encourage a sense of involvement and community pride.
- **Economic Development:** To facilitate economic development and encourage and support investment and employment opportunities.

Nhulunbuy Corporation Limited

Nhulunbuy Corporation Limited (the Corporation) provides town administration and municipal services to the township of Nhulunbuy. The Corporation is a not for profit company that was established under the Mining (Gove Peninsula Nabalco Agreement) Ordinance of 1968. It now functions under a service agreement with Pacific Aluminium.

1.4.3.5 LOCAL IMPLEMENTATION PLANS

Two communities in the study area, Yirrkala and Gapuwiyak, have developed Local Implementation Plans under the *National Partnership on Remote Service Delivery*. The objective of this partnership is to improve service delivery in remote Indigenous communities to a standard that could be reasonably expected of communities of comparable size, location and need, elsewhere in Australia.

The Local Implementation Plans outline community agreed priorities, actions, responsibilities and commitments. Key goals and outcomes for the Project area are listed in Table 1-10.

Table 1-10 Yirrkala and Gapuwiyak Local Implementation Plans Key Goals and Outcomes

Goal	Outcome
Yirrkala Local Implementation Plan	
Halve the gap in mortality rates for under 5's within a decade.	All children to have access to high quality early childhood education and care services.
	Yirrkala children are born healthy and stay healthy.
Halve the gap in reading, writing and numeracy achievements for Indigenous children within a decade. Halve the gap for Indigenous students in year 12 equivalent attainment by 2020.	All community members value and promote education as the key to future opportunity.
	Plan infrastructure to meet service needs.
	Increase school attendance so that no child has more than three unexplained absences in a row.
Close the gap in life expectancy within a generation.	The people of Yirrkala have access to effective, comprehensive primary and preventative health care.
Healthy homes.	We have enough homes for Yirrkala people to reduce overcrowding.
To halve the gap in employment outcomes between Indigenous and non-Indigenous Australians within a decade	The town of Yirrkala becomes a hub for the region.
	Identify and create opportunities for small business development.
Safe communities	Yirrkala community is a safe place to live.
	Policing meets community needs.
	Improve child protection standards at Yirrkala.
Gapuwiyak Local Implementation Plan	
Halve the gap in mortality rates for under 5's within a decade	All children will have access to Early Childhood Education in the year immediately preceding primary school.
	Adequate infrastructure to deliver early childhood programs.
Halve the gap in reading, writing and numeracy achievements for Indigenous children within a decade. Halve the gap for Indigenous students in year 12 equivalent attainment by 2020.	All community members value and promote education as the key to future opportunity. Education services in Gapuwiyak respond to the Indigenous way of learning and provide an opportunity and pathway to meet or exceed national education outcomes over time.
Close the gap in life expectancy within a generation.	Gapuwiyak people take personal responsibility for their health.
	Gapuwiyak people access programs and services that promote healthy lifestyle and prevent illness.
Healthy homes.	We have enough homes to reduce overcrowding.
Economic participation.	The town of Gapuwiyak becomes the service hub for the surrounding areas.
	All capable Gapuwiyak adults have the opportunity to engage in meaningful work.

2 BASELINE ENVIRONMENT – SOCIAL ASPECTS

2.1 Population

2.1.1 Population size and growth

At the time of the 2011 Census, the population of the UCL of Katherine was 6,998 people, representing 69% of the population of the larger Katherine SA2. The population of the Nhulunbuy UCL was 4,287 people, representing 57% of the population of East Arnhem SA2.

Between 2006 and 2011 the population of Katherine increased by 1.1%, while Nhulunbuy's population decreased by almost 18%, compared to a growth rate of 8% for the Northern Territory over the same time period. The Elsey SA2, located between Katherine and East Arnhem SA2, experienced the largest population growth, at 179% for the period (Table 2-1).

Between 2010 and 2025, the population of the Northern Territory is expected to grow at an average of 1.5% - 1.6% per annum, which is similar to the growth trend noted between the last two Census periods. Population projections for the East Arnhem and Katherine region for 2010-2025 are slightly lower than this; with average annual growth rates (AAGRs) of between 1.1% and 1.3% predicted over this period (Department of Treasury and Finance, 2011).

Table 2-1 Population Size and Growth, 2011

Locality	Total Population 2006	Total Population 2011	Change 06-11 (%)	AAGR 06-11 (%)
Katherine UCL	6,925	6,998	1.1	0.2
Nhulunbuy UCL	5,221	4,287	-17.9	-3.6
Elsey SA2	1,090	3,042	179.1	35.8
Katherine SA2	10,088	10,719	6.3	1.3
East Arnhem SA2	6,518	7,488	14.9	3.0
Northern Territory	217,093	234,422	8.0	1.6

Source: ABS Census of Population and Housing, 2006 and 2011

2.1.2 Demographic composition

In 2011, the median age in Katherine and Nhulunbuy was recorded at 34 and 33 years respectively, which is consistent with the median age of the Northern Territory as a whole (33 years) (Table 2-2). The median age for the East Arnhem SA2 and the smaller, regional communities close to the pipeline route, between Katherine and Nhulunbuy, was considerably younger than this and ranged from 15 years to 27 years (Table 1-7).This finding is in line with the median age of Australia's Indigenous population (21 years) and is reflective of the large Indigenous population within the East Arnhem and Elsey SA2s.

Consistent with its low median age, East Arnhem SA2 was found to have the highest proportion of the population aged under 25 years (49%), higher than the proportion in the Northern Territory population (35.6%). However, overall, the proportion of the population within the economically active age range (15-64 years) across the study area was found to be similar to that of the Northern Territory.

Gender distribution across the study area was noted to be similar to that of the Northern Territory, with a fairly equal representation of males and females. In the Nhulunbuy UCL, however, there was found to be a slightly higher proportion of males which could be due to the type of work opportunities available in the area.

Table 2-2 shows that the study area has a large Indigenous population. The East Arnhem and Elsey SA2s have the largest Indigenous populations, representing 90% and 53% of the population respectively. These two regions also recorded the highest proportion of the population who speak a Language Other than English (LOTE) at home. Of those who spoke a LOTE, Australian Indigenous languages were the most dominant, at 47% in the Elsey SA2 and 86% in the East Arnhem SA2.

Only a small proportion of the population in the study area was born overseas and of those born overseas, the majority were from the English speaking countries of the United Kingdom and New Zealand. The largest group of non-English speaking people born overseas were from the Philippines and were predominantly based in Katherine. This suggests that communities in the study area, particularly those in some areas of East Arnhem SA2, may have had little exposure to other cultural influences.

Table 2-2 Key Demographic Characteristics of the Study Area, 2011

Locality	Median Age	Age 15 –64 Years (%)*	Gender (%)		Indigenous (%)	Born Overseas (%)	Speaks LOTE (%)
			Male	Female			
Katherine UCL	34	69.2	49.5	50.5	26.3	1.6	11.6
Nhulunbuy UCL	33	70.4	55.1	44.9	6.5	0.6	9.3
Elsey SA2	35	65.8	49.8	50.2	52.9	2.5	48.5
Katherine SA2	36	68.0	50.5	49.5	22.5	1.8	10.0
East Arnhem SA2	25	65.5	50.1	49.9	89.5	0.0	86.2
Northern Territory	33	71.0	51.6	48.4	24.8	2.6	24.4

* Potentially economically active proportion of the population

Source: ABS Census of Population and Housing, 2011

2.2 Workforce Characteristics

2.2.1 Labour force and unemployment

At the 2011 Census, labour force participation varied significantly across the study area. Nhulunbuy in particular recorded a significantly more economically active population than other communities in the study area, with over 81% of eligible residents participating in the workforce. Nhulunbuy also exhibited low unemployment of only 1.7%, compared to much higher levels across the rest of the study area (Table 2-3).

In the East Arnhem and Elsey SA2s, only 44% - 47% of the eligible population were participating in the workforce, considerably lower than the Northern Territory rate of 66%. The percentage of people involved in full-time and part-time work opportunities was also significantly lower than the Territory average, and unemployment rates were accordingly high. This may be due to low education participation rates or a lack of employment opportunities across the region, and may be indicative of lower skills and experience levels. The practice of ‘humbugging’ can also serve as a disincentive to employment. The term

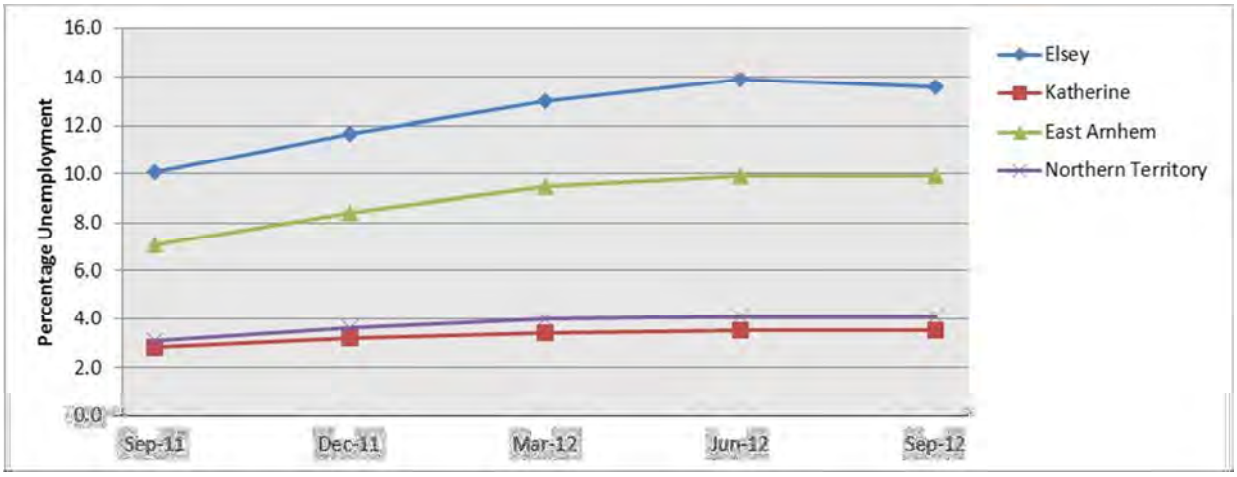
'humbugging' refers primarily to the practice of demanding money from relatives, often violently, with wives and the elderly being particular targets.

Table 2-3 Labour Force Participation, 2011 (%)

Locality	Total Labour Force	Total Employed	Total Unemployed	Full Time Work	Part Time Work
Katherine UCL	66.2	62.2	4.0	43.9	11.9
Nhulunbuy UCL	81.3	79.6	1.7	60.6	12.8
Elsey SA2	47.1	41.5	5.5	22.0	10.1
Katherine SA2	68.4	57.0	4.1	44.7	12.3
East Arnhem SA2	44.4	36.3	8.1	18.5	13.9
Northern Territory	66.4	63.0	5.1	66.1	19.9

Source: ABS Census of Population and Housing, 2011

The Department of Education, Employment and Workplace Relations (DEEWR) Small Area Labour Market publication provides more recent unemployment data, and shows that unemployment levels across the study area have increased slightly between 2011 and 2012. In the Elsey SA2 in particular, unemployment increased by around 4% over this period (Figure 2-1).



Source: DEEWR, 2012

Figure 2-1 Unemployment Rates, 2011-2012

2.2.2 Skills profile

At the time of the 2011 Census, the primary industries of employment in Katherine were 'public administration and safety' (21%), 'healthcare and social assistance' (17%), 'education and training' (9%) and 'accommodation and food services' (9%). This is reflective of Katherine's position as a regional centre for government and private organisations.

In contrast, the primary industry of employment in Nhulunbuy was 'manufacturing', representing 30% of all employment in the locality. In Nhulunbuy the 'mining' industry also featured more highly (7% of employment) than the other locations and the Northern Territory as a whole which is indicative of the town's origin. The majority of these industries and opportunities would be directly associated with the Refinery.

Across the broader SA2 areas, 'public administration and safety', 'education and training' and 'health care and social assistance' were prominent. Elsey SA2 was the only location to record significant employment in the 'agriculture, forestry and fishing' industries (at 17%) (Table 2-4).

Table 2-4 Employment by Industry, 2011 (%)

Industry	Katherine UCL	Nhulunbuy UCL	Elsey SA2	Katherine SA2	East Arnhem SA2	Northern Territory
Agriculture, forestry & fishing	1.5	0.1	**16.6**	3.9	0.8	2.3
Mining	1.5	6.5	1.7	1.4	0.0	3.0
Manufacturing	2.1	**29.8**	2.9	2.5	0.3	4.2
Electricity, gas, water & waste services	1.3	0.8	0.4	1.3	0.0	1.3
Construction	6.0	8.1	3.4	6.4	4.5	8.3
Wholesale trade	1.2	0.5	0.7	1.5	0.2	2.2
Retail trade	8.6	6.8	6.6	7.8	5.9	8.0
Accommodation & food services	**9.4**	4.6	8.1	7.7	0.5	6.2
Transport, postal & warehousing	3.9	3.2	0.7	4.0	1.8	4.7
Information media & telecommunications	1.0	0.5	0.4	0.8	0.0	1.1
Financial & insurance services	1.0	0.4	0.7	1.0	0.4	1.4
Rental, hiring & real estate services	1.0	0.8	0.0	1.0	0.3	1.4
Professional, scientific & technical services	3.8	2.2	3.6	3.6	1.4	5.1
Administrative & support services	4.0	3.3	1.9	3.8	1.2	3.1
Public administration & safety	**21.4**	**9.1**	**24.4**	**23.6**	**20.5**	**19.8**
Education & training	**9.5**	8.9	9.4	**9.3**	**18.3**	**8.9**
Health care & social assistance	**16.7**	**10.3**	**11.3**	**14.4**	11.7	**10.3**
Arts & recreation services	1.0	0.8	2.3	1.1	3.9	2.3
Other services	3.3	2.3	2.3	3.3	**21.7**	4.6

Source: ABS Census of Population and Housing, 2011

2.3 Housing Profile

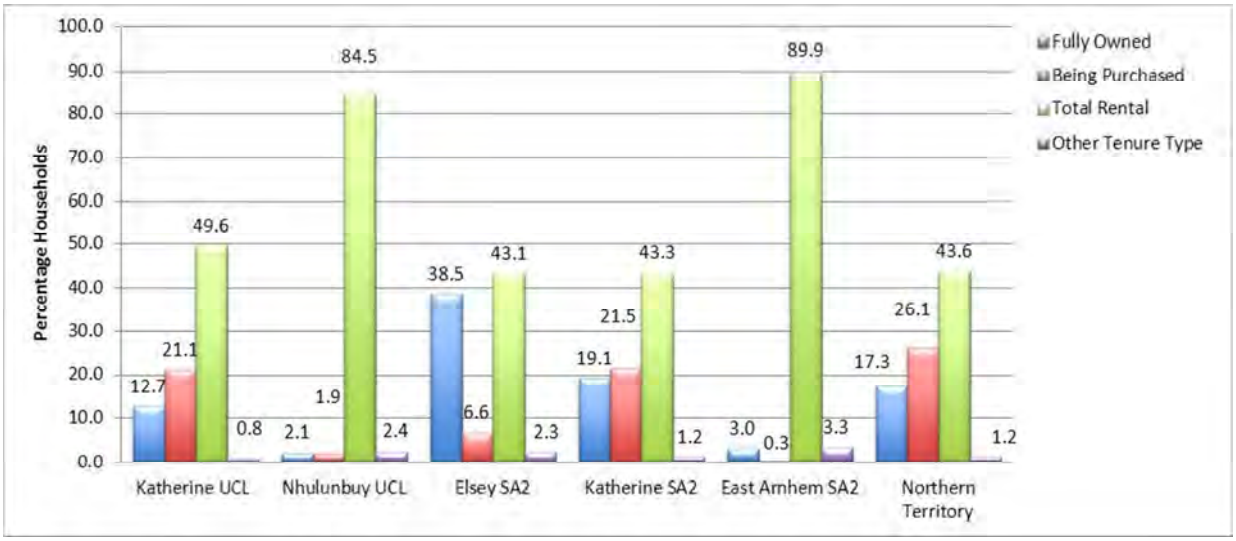
Both Katherine Town Council and the East Arnhem Shire Council noted during consultations that housing markets are tight with low availability and affordability in Katherine and Nhulunbuy respectively. Housing is not seen as an existing or future issue for communities along the pipeline.

Across the study area the most common dwelling type was a 'separate house'. Nhulunbuy reported the largest proportion of residents living in a 'flat, unit or apartment' (22%) when compared to the rest of the study area and the Northern Territory, which ranged between 2% and 17% in this category. Nhulunbuy's more diverse mix of dwelling type can be accounted for by the high level of company-provided accommodation in this locality. The Elsey SA2

reported the highest percentage of people living in an 'other' dwelling type (46%), the majority of which were living in caravan or cabin style accommodation.

In 2011, the majority of the population of the study area were renting accommodation; particularly those residents in Nhulunbuy and the broader East Arnhem SA2 (Figure 2-2). Overall, fewer residents in the study area either owned or were purchasing their home when compared to the Northern Territory as a whole, with the exception of the Elsey SA2 where almost 40% of residents owned their homes.

Of residents who were renting accommodation, a large proportion were renting from the Territory Housing Authority, particularly in Elsey (65%) and East Arnhem SA2 (41%) (Table 2-5). The study area also had a high percentage of residents renting from 'other landlord types', particularly in Nhulunbuy (63%). 'Other landlord type' includes dwellings rented through government and other employers and residential parks. Given that Nhulunbuy is predominantly based around the mining industry and refinery operations, many local residents would rent accommodation directly from their employer.



Source: ABS Census of Population and Housing, 2011

Figure 2-2 Tenure Type, 2011 (%)

Table 2-5 Landlord Type, 2011 (%)

Locality	Estate Agent	Housing Authority	Person not in Household	Housing Co-op Group	Other Landlord Type	Not Stated
Katherine UCL	23.7	28.0	12.7	4.5	29.0	2.0
Nhulunbuy UCL	5.6	6.9	3.5	0.2	62.9	5.4
Elsey SA2	0.0	65.2	2.6	2.3	21.4	8.5
Katherine SA2	19.2	22.5	15.1	6.9	34.1	2.2
East Arnhem SA2	0.0	40.8	0.8	27.3	19.5	1.5
Northern Territory	28.2	24.0	17.5	5.7	21.3	3.2

Note: 'Other landlord type' comprises of dwellings being rented through a 'Residential park (includes caravan parks and marinas)', 'Employer - Government (includes Defence Housing Authority)' and 'Employer - other employer'.
Source: ABS Census of Population and Housing, 2011

The high percentage of residents in the study area renting from the Territory 'housing authority' or 'other landlord type' (which includes local employers) significantly affects the ABS findings regarding median rent. As noted in Table 2-6, the median rent in Nhulunbuy, the East Arnhem SA2 and the Elsey SA2 is very low when compared with Katherine UCL and SA2 and the Northern Territory more broadly. This may be partially attributed to the fact that many people renting in Nhulunbuy receive free or subsidised rental accommodation as part of their employment arrangements, thus impacting on the area's averages.

Table 2-6 Median Loan Repayment and Weekly Rent, 2011

Locality	Median Monthly Loan Repayment	Median Weekly Rent
Katherine UCL	$1,690	$185
Nhulunbuy UCL	$2,100	$3
Elsey SA2	$525	$60
Katherine SA2	$1,733	$200
East Arnhem SA2	$108	$40
Northern Territory	$2,050	$224

Source: ABS Census of Population and Housing, 2011

2.4 Community Wellbeing and Social Infrastructure

Throughout this section, the socio-economic health and wellbeing of the study area has been compared to the health and wellbeing of the other areas and the Northern Territory as a whole. The overview of the study area provided in Section 1.4 also provides an overview of the social values and facilities available across the region. Together, these provide an overview of life in the study area and a description of key issues. The sections which follow aim to supplement this data, and provide a quantitative analysis of some key socio-economic wellbeing indicators, including around health, education, and safety.

2.4.1 Socio-economic wellbeing

The ABS produces four Socio-Economic Indices for Areas (SEIFA) based on Census data for local areas which identify areas of relative advantage and disadvantage.

The Index of Relative Socio-Economic Advantage/Disadvantage is a continuum of advantage to disadvantage. It considers indicators relating to income, education, occupation, wealth and living conditions. The Index of Economic Resources reflects indicators such as income and expenditure including wages and rental cost for families, and variables that reflect wealth (dwelling size). Income variables are also specified by family structure, as this affects disposable income. The baseline for the SEIFA is a score of 1,000, with a score of over 1,000 indicating an area of socio-economic advantage, while a score below 1,000 indicates an area of relative disadvantage.

Table 2-7 shows that in 2006 the Elsey and Katherine Statistical Local Areas (SLAs - similar to SA2s) are both slightly disadvantaged, while the East Arnhem SLA is significantly disadvantaged. This signifies that income levels and the proportion of professional people are lower in these regions when compared to the Northern Territory overall; and as a result communities in this region may be more vulnerable to economic change.

Table 2-7 Socio-Economic Advantage / Disadvantage and Economic Resources, 2006

Locality	Advantage / Disadvantage			Economic Resources		
	Score	Ranking NT	Percentile Ranking in NT	Score	Ranking NT	Percentile Ranking in NT
Elsey SLA	911	41	46	903	43	48
Katherine SLA	977	53	59	926	41	51
East Arnhem-Balance SLA	644	4	5	505	2	3

Note: 2006 SEIFA data is based on 2006 Statistical Local Area boundaries, which are similar to 2011 boundaries.

Source: ABS SEIFA, 2006

Table 2-8 presents median household and individual incomes in the study area as well as median number of persons per household as reported in the 2011 Census.

This data shows that income levels in Nhulunbuy, both household ($2,565) and individual weekly incomes ($1,295), are substantially higher than the Northern Territory despite the persons per household being the same. Nhulunbuy also had a high proportion of individual residents (54%) earning over $1,000 per week and households earning over $1,500 (72%). In contrast, individual incomes in the broader East Arnhem SA2, which includes Nhulunbuy, are the lowest across the study area and lower than the Northern Territory overall. Although household incomes in East Arnhem SA2 are similar to the Katherine UCL and SA2, the number of persons per households in East Arnhem SA2 is double that of Katherine UCL and SA2, indicating higher levels of disadvantage. This data was verified during consultations with the East Arnhem Shire Council, which also noted that there was a high level of dependence on government welfare payments across the Shire.

Table 2-8 also shows that the Elsey SA2 has the lowest household income of the study area and also a high number of persons per household, suggesting that the Elsey SA2 could be more disadvantaged now than the 2006 SEIFA data indicates.

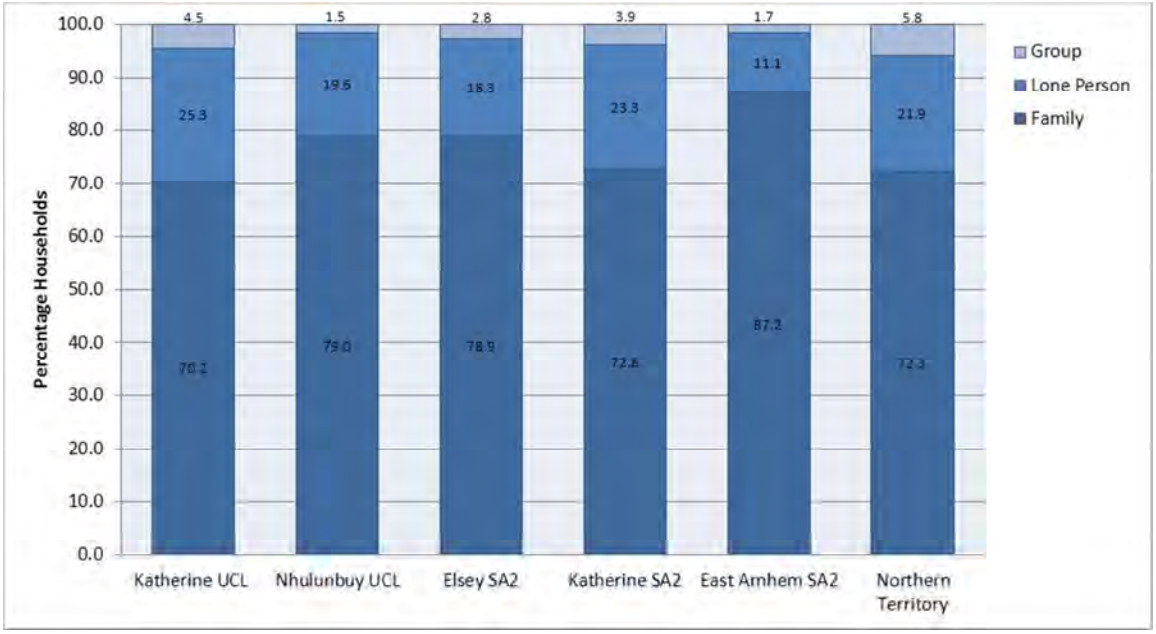
Table 2-8 Median Incomes and Persons per Household, 2011

Locality	Median Household Income	Median Individual Income	Persons per Household
Katherine UCL	$1,403	$695	2.7
Nhulunbuy UCL	$2,565	$1,295	2.9
Elsey SA2	$938	$312	4.1
Katherine SA2	$1,427	$704	2.7
East Arnhem SA2	$1,458	$261	5.4
Northern Territory	$1,608	$733	2.9

Source: ABS Census of Population and Housing, 2011

The majority of households across the study area are 'family' households, and only Katherine UCL and SA2 recorded a slightly higher percentage of lone-person households than the Northern Territory overall (Figure 2-3)

The Nhulunbuy UCL recorded the highest percentage of families with children (62%) across the study area and the Northern Territory, and the smallest percentage of single parent families (8%). In comparison, the broader East Arnhem SA2 recorded the highest percentage of single parent families (34.2%) closely followed by Elsey (24.1%).



Source: ABS Census of Population and Housing, 2011

Figure 2-3 Household Profile, 2011

The ABS Census also measures the number of people with a profound or severe disability. This is defined as those people needing help or assistance with self-care, mobility and/or communication needs because of a disability, long term health condition (>6 months) or old age[1]. At the time of the 2011 Census, between 1.1% and 3.6% of the population of the

[1] Source: http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/2901.0Chapter702011 (page accessed 12.11.12)

study area were recorded as needing assistance, which is similar to the percentage across the Northern Territory overall (2.7%).

2.4.2 Health

As at 2013, there were two main district hospitals within the study area, located in Katherine and Nhulunbuy. The Gove District Hospital in Nhulunbuy is a 32 bed acute care facility servicing the East Arnhem region and providing medical, surgical, paediatric, respite and maternity services. The hospital also provides a district medical officer who services the region, including outlying community clinics. Patients can be referred to the hospital for inpatient, outpatient and specialist care from one of the surrounding community clinics (Northern Territory Health, 2013).

The Katherine District Hospital is a 60-bed non-specialist medical, diagnostic and treatment facility which services Katherine town, Katherine region and remote areas, extending approximately 340,000 km^2 between the Western Australian and Queensland borders (Northern Territory Health, 2013). The hospital does not have any surgery capability.

There are two hospitals in Darwin, one private and one public. Consultations revealed that Darwin has one of the busiest emergency departments in the country.

There are also health centres or community clinics located in Nhulunbuy, Katherine, Beswick, Bulman- Weemol, Manyalluluk, Barunga (Wugularr), Yirrkala, Gapuwiyak and Binjari.

In 2011, there were 117 community care places and 52 aged care places in the study area (Table 2-9).

Table 2-9 Community and Residential Care Places, 2011

Locality	Community Care Places	Residential Aged Care Places
Katherine SLA	43	48
Nhulunbuy SLA	7	4
Elsey SLA	0	0
East Arnhem – Balance SLA	67	0

Source: Public Health Information Development Unit, 2011. Data based on 2006 SLA boundaries

The Public Health Information Development Unit's *Social Health Atlas of Australia, Northern Territory, 2011* provides data on key population characteristics, including health status and risk factors. Although indicator data was missing for many locations in the study area, the available data demonstrates that the health of the study area is generally lower than for Australia a whole. The median age of death was found to be low, with a median age of death between 53 and 64 years, compared to 70 years for Australia more generally (Table 2-10).

Table 2-10 Health Indicators, 2011

Indicator	Katherine SLA	Nhulunbuy SLA	Elsey SLA	East Arnhem-Balance SLA	Northern Territory	Australia
Avoidable mortality (per 100,000)	428	219.0	368.6	746.7	364.2	167.6
Smokers (%)	28.5	N/a	N/a	N/a	N/a	20.3
High psychological distress (%)	12.7	N/a	N/a	N/a	N/a	11.7
High risk alcohol consumption (%)	5.1	N/a	N/a	N/a	N/a	5.4
Obesity in males (%)	27.6	N/a	N/a	N/a	N/a	19.6
Obesity in females (%)	18.2	N/a	N/a	N/a	N/a	16.4
Type II diabetes (%)	4.78	N/a	N/a	N/a	N/a	4.8
Median age at death	64	53	53	50	59	79
Persons with at least one of the four following risk factors- smoking, harmful use of alcohol, physical inactivity, obesity (%)	65.9	N/a	N/a	N/a	N/a	55.9

Source: Public Health Information Development Unit, 2011. Data based on 2006 SLA boundaries. N/a- data not available for many indicators

2.4.3 Education

Within Nhulunbuy, Katherine and the communities located along the proposed pipeline route, there are five primary schools, two secondary schools, and twelve combined schools (Table 2-11). Consistent with the region's demographic profile, many of the schools have high percentage of Indigenous students. In these schools, a high proportion of students spoke a language other than English at home, which is likely to be an Australian Indigenous language. School attendance rates across the study area vary. In general, school attendance in Katherine and Nhulunbuy is higher than in many of the smaller combined schools located within regional communities between Katherine and Nhulunbuy.

Within the study area there are a number of childcare centres, including pre-school, long day care and community care. This includes two child care centres in Nhulunbuy and seven in Katherine (Nhulunbuy Corporation, 2013; Katherine Town Council, 2013). The communities between Katherine and Nhulunbuy also offer a number of childcare facilities including pre-schools in Barunga, Wulgularr (Beswick) and Bulman, a crèche in Gapuwiyak and a childcare centre in Yirrkala (Sunrise Health Services, 2013; Yirrkala Implementation Plan, 2011; Gapuwiyak Implementation Plan, 2011).

Table 2-11 School Enrolment and Attendance in the Study Area, 2011

School	Enrolments	Indigenous	FTE Teaching Staff	Attendance Rate
Primary Schools				
Nhulunbuy Primary School	515	23%	33.1	89%
Casurina Street Primary School	263	13%	16	92%
Katherine South Primary School	270	32%	16.5	89%
MacFarlane Primary School	209	87%	16.2	82%
Clyde Fenton Primary School	200	62%	18.5	86%
Secondary Schools				
Nhulunbuy High School	263	15%	27.6	85%
Katherine High School	536	44%	48.5	80%
Other / Combined Schools				
Nhulunbuy Christian School	166	4%	12.1	95%
Katherine School of the Air	173	20%	20	100%
St Joseph's School	311	31%	23.8	85%
Kintore Street School Katherine	11	82%	2	57%
Wulgularr School (Beswick)	140	99%	11.8	59%
Barunga School (Barunge-Bamyili)	56	98%	5.1	70%
Bulman School	49	100%	6	69%
Manyalluluk School	21	100%	2	87%
Yirrkala School	134	100%	23.5	52%
Yirrkala Homeland School	175	100%	32.1	72%
Baniyala Garrnagali School	33	100%	2.8	67%
Gapuwiyak School	220	97%	16	70%

Source: www.myschool.edu.au – viewed 26th February 2013

Within the study area, the majority of students currently attending an educational institution are at primary school level, with a higher proportion of students studying at this level in all locations within the study area, except in Katherine, than the Northern Territory as a whole. The East Arnhem SA2 reported the highest proportion of the population studying at both primary and secondary levels, which is consistent with the East Arnhem SA2's age profile. Katherine and Nhulunbuy also recorded a similar proportion of the population studying at university as that of the Northern Territory overall. This is likely due to the fact that the Charles Darwin University has campuses in both Katherine and Nhulunbuy.

Table 2-12 notes that education levels in the study area, both in terms of completed schooling and post school qualifications, are highest in Nhulunbuy, and the Katherine UCL and SA2. The most common type of post-school qualification across the study area was a 'certificate' level qualification.

Table 2-12 Education Completion Levels, 2011 (%)

Locality	Year 10 or Equivalent	Year 12 or Equivalent	Diploma/ Advanced Diploma	Certificate	Bachelor Degree	Graduate Diploma/ Certificate	Postgraduate Degree
Katherine UCL	21.2	36.5	6.6	18.5	9.3	1.6	1.7
Nhulunbuy UCL	23.1	48.0	7.8	28.7	12.9	2.5	3.7
Elsey SA2	28.0	24.9	4.3	16.6	6.9	1.6	1.3
Katherine SA2	23.0	35.2	12.7	36.4	16.8	2.7	3.1
East Arnhem SA2	19.7	19.0	8.4	33.9	15.3	4.5	3.5
Northern Territory	19.7	34.9	7.2	20.4	11.4	2.0	2.9

Source: ABS Census of Population and Housing, 2011

2.4.4 Safety

Within the study area there are three police stations, including one in Katherine, one in Bulman and one in Nhulunbuy.

The *Northern Territory Annual Crime Statistics Issue 1, 2011-2012* is the first issue of an annual series on crime statistics. It was compiled by the Research and Statistics Unit of the Northern Territory Department of the Attorney General and Justice, with data recorded by the Northern Territory Police. Statistics in the report have been categorised into six urban centres, the Northern Territory Balance, which includes all areas outside of urban centres, and the Northern Territory as a whole. The study area largely falls within the Katherine and Nhulunbuy regions, which were categorised according to ABS SA2 boundaries.

Overall, Aboriginal persons in the Northern Territory were more likely to be victims of assault than non-Indigenous persons. In 2011/2012 the assault victimisation rate for Indigenous females, at a rate of 10,710 victims per 100,000 of the population, was three times higher than the overall assault victimisation rate in the Northern Territory. In terms of male and female assault victimisation rates, the rate of assault victimisation for Indigenous females was 12 times greater than the rate for non–Indigenous females; while the rate for Indigenous males was 2,957 victims per 100,000 population, twice as large as the rate for non-Indigenous males.

The victimisation rate for alcohol-related assault was also four times higher amongst Indigenous females, at 7 per 100 persons, when compared to the overall population. Indigenous females also constituted 73% of all domestic violence victims at a rate of 8,780 victims per 100,000 of the population, which was almost 23 times the rate for non-Indigenous females.

In Katherine, the number of assault victims was 5% lower in 2011/2012 than in 2010/2011, with Indigenous males and non-Indigenous females experiencing the largest decrease in assault cases in this period. Nhulunbuy also experienced a 2% decrease in the number of assault victims in 2011/2012 and, like Katherine, the largest decrease occurred among Indigenous males and non-Indigenous females. In 2011/2012 there was an increase in non-Indigenous male assault victims in both Katherine and Nhulunbuy.

During consultations with the East Arnhem Shire Council it was noted that across the Shire incidence of crime appeared to be rising. However, the mainland areas within the immediate Project area have been relatively stable. Vandalism is the most commonly reported crime.

In the Northern Territory overall, the rate of assault victimisation was 3 per 100 persons. Although this rate has remained consistent over the last few years, it is 35% higher than it was in 2006/2007. In 2011/2012, the Northern Territory also experienced an increase in in homicide and related offences, recording 19 victims in 2011/2012, compared to 15 victims in 2010/2011.

When compared to the Northern Territory overall, the rate of assault offences in Katherine was 105% greater and in Nhulunbuy it was 21% lower. Although the assault rate was lower in Nhulunbuy than the Northern Territory, there was a 16% increase between 2010/2011 and 2011/2012.

The rate of offences against property in the Northern Territory in 2011/2012 was 9,163 offences per 100,000 persons. In 2011/2012, in Nhulunbuy the property offence rate was 41% lower than the Territory overall and in Katherine it was 2% greater. In the last few years the rate of property crime in Katherine and Nhulunbuy has decreased.

In 2011/2012, exceeding the speed limit made up 56% of all traffic related offences, representing a 15% increase since 2010/2011. Alcohol related traffic offences decreased by 23% between 2010/2011 and 2011/2012 and constituted only 5% of all traffic related offences in 2011/2012.

Consultations with Roper Gulf Shire revealed that driving under the influence and resultant loss of licence was a significant issue that subsequently impacted on people's ability to work. The Council has programs in place designed to assist people to have their licence returned.

3 RISK ASSESSMENT – SOCIAL IMPACTS

This section provides an assessment of potential Project-related social impacts and opportunities as identified through the impact assessment process. Relevant management and mitigation strategies are also proposed, and these strategies are attached in a stand-alone Social Impact Management Plan (SIMP) contained in Appendix 1.

3.1 Impact Assessment Methodology

Each identified likely impact or opportunity was assessed in terms of its potential consequence and significance, using a tailored impact rating mechanism. The impact rating mechanism applies a number of assessment parameters which are summarised below and outlined in detail in Appendix 2:

- Nature of the impact (positive, negative or neutral).
- Project phase (construction, operation, decommissioning).
- Extent of the impact (site, local, regional, national).
- Duration of the impact (short-term, medium-term, long-term, permanent / irreversible).
- Severity of the impact (negligible, low, medium, high, very high).
- Probability (impossible, unlikely, possible, probable, almost certain).

The above parameters were then applied to assess and rank impacts in terms of consequence and significance, for both positive and negative impacts. Consequence and significance definitions are also provided in the complete methodology at Appendix 2.

Stakeholder perceptions of likely Project-related impacts and opportunities were sought through consultations and were considered throughout the impact assessment process. This ensured that both real and perceived risks were considered in the assessment process.

Through the impact assessment process, impacts were grouped and categorised according to the following aspects, and are discussed in detail in the relevant sections:

- Economic development and employment (Section 3.3.1).
- Land and country (Section 3.3.2).
- Community safety (Section 3.3.3).
- Social values and community cohesion (Section 3.3.4).
- Infrastructure and services (Section 3.3.5).

3.2 Expected Population Change

In general, a large proportion of the social impacts and benefits of infrastructure projects can be attributed to population and demographic change. Shifts in population numbers and demographic composition are, in themselves, neither positive nor negative, and in many cases result in a number of flow-on impacts that can be beneficial, adverse, or both, for local and regional communities.

For the KGGP Project, it is anticipated that an average of 780 workers will be required during construction, of which the majority will be FIFO non-resident workers who are accommodated in purpose-built construction camps along the pipeline route. Over the short-term it is therefore not anticipated that there will be any noticeable shift in the resident populations of Katherine, Nhulunbuy, or any of the communities along the pipeline corridor.

The operations workforce for the pipeline will comprise approximately 10 full-time positions, all of which are likely to be based in either Nhulunbuy or Katherine. It is expected that the majority of these positions will be filled by existing residents, and so the population and demographic impact of new workers / families moving into the area should be negligible.

Therefore, throughout the life of the Project, the KGGP is not expected to directly result in significant changes to current population levels or demographic composition. In many ways, the construction and operation of the pipeline will be a contributing factor to maintaining stability in local populations, particularly at Nhulunbuy. As outlined in Section 1.1, a Strategic Review of the existing refinery found that for the refinery to remain viable, a more affordable energy option needed to be sourced. The intention, therefore, is that natural gas will be accessed via the pipeline, thus securing the future of the refinery and consequently stabilising the population at Nhulunbuy.

3.3 Key Social Impacts – Assessment and Mitigation

A contextual analysis of the likely impacts and opportunities is provided in this section, along with proposed mitigation and management strategies. Detailed mitigation measures are outlined in the Social Impact Management Plan, attached in Appendix 1.

3.3.1 Economic development and employment

A summary of key economic development and employment impacts of the Project is provided in the table which follows. Management measures for enhancing these opportunities are described in Section 3.1 of the SIMP (Appendix 1).

Table 3-1 Impact Summary – Economic Development and Employment

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Sustaining the economic and employment benefits of the refinery at Gove	Construction Operation	Positive	**Very high**	**Very high**
Direct employment opportunities for local communities	Construction	Positive	**Medium**	**Medium**
Direct training and development opportunities for local communities	Construction	Positive	**Low**	**Medium**
Procurement and contracting opportunities for local businesses	Construction Operations	Positive	**Low**	**Medium**

3.3.1.1 EMPLOYMENT AND TRAINING

As identified consistently during SIA consultation, the primary economic and employment benefits of the Project are related to the role of the pipeline in sustaining the operation of the existing refinery at Gove. In 2012, Rio Tinto undertook a Strategic Review of the ongoing feasibility of the Gove refinery, which included an assessment of potential closure or

'mothballing' options. This Review identified that the closure of the refinery would result in approximately 1,100 direct job losses, leading to a reduction in the population of Nhulunbuy from approximately 4,000 people down to approximately 1,500 people (Rio Tinto Strategic Review 2012).

This expected population change may have a range of indirect or flow-on impacts on the local and regional economy, including:

- A significant decrease in the level of expenditure with local businesses who are direct suppliers of goods or services to the operation.
- A drop in local wages, leading to a direct impact on other businesses (including those without a direct supplier relationship to the operation) in the town.
- Significant changes to the local property market due to an oversupply of properties, potentially leading to mortgage stress for current home owners and difficulties in selling properties and relocating.

The KGGP Project's role in the continuing operations of the refinery would therefore avoid these impacts and thus sustain approximately 1,100 long-term jobs and the ongoing economic benefits of the refinery.

Directly, the Project will also have a short-term positive effect on the local and regional economy. Construction of the pipeline is expected to occur over a 12 month period, requiring an average workforce of 780 people over this period. The operations phase of the Project will extend over a further 50 years, but will require only a very small workforce of approximately 10 people.

Although the construction workforce is significant, opportunities will be very short-term in nature and positions will largely need to be filled by specialist workers with pipeline competency, particularly for management and supervisory positions. The small populations of the communities along the pipeline route, and the broad skills profiles of these communities (per Section 2.2.2), pose challenges to the sourcing of specialist workers from the local area. In particular, the Project has acknowledged a number of barriers to local and Aboriginal employment in the area and will apply management measures to overcome these. Barriers may include:

- Low work-readiness, skills, and education levels.
- A low motivation or aspiration by local people to become involved in training and employment opportunities that are located away from their home communities.
- Proposed FIFO rosters may be intensive or incompatible with community and family responsibilities.
- Settling in workers' camps or local towns with different socio-economic dynamics may be difficult for some workers.

Once potential barriers to employment have been thoroughly assessed, Pacific Aluminium will engage with the Project's primary contractor and local stakeholders to develop local and Aboriginal employment targets for the Project. These targets will be realistically defined based on the above socio-economic context, and previous experience on projects in remote parts of the Northern Territory.

Training opportunities afforded by the Project are likely to be limited, given the short-term construction period and the Project's requirement for highly specialised skills sets. The

timeframes of construction limit the potential for apprenticeships and traineeships, as well as for longer term on-the-job training, mentorship and career progression.

Given the limited and short-term nature of employment and training opportunities, community expectations and aspirations in this regard will need to be closely monitored and managed. In particular, it was mentioned that a number of pastoralists along the pipeline route may anticipate direct employment opportunities with the Project will be afforded to them. Local procurement and employment strategies will seek to optimise local involvement in the Project. The management of expectations will be a core component of the early community consultation program that is applied for the Project, and communities and agencies will be provided with accurate and accessible information about the nature of potential opportunities.

A range of benefit 'enhancement' measures will also be applied to maximise Project benefits around local employment and training opportunities. In particular, Pacific Aluminium will develop a Local Employment Plan which will outline the Project's planned approach to sourcing a construction and operations workforce. This Plan will be developed in close consultation with the Project's primary contractor and local government stakeholders. The Local Employment Plan will include a hierarchy of employment preference to ensure that opportunities are afforded to local and Aboriginal people where the skills and qualifications requirements of employment positions can be adequately met.

Construction of the Mount Todd Mine, 50km north of Katherine, will potentially coincide with the construction of the pipeline, which will potentially reduce, or see both projects competing, for the limited, qualified local labour pool.

Although the provision of training opportunities prior to construction will be limited, Pacific Aluminium will work through its existing Indigenous Training Program at Gove with the aim of identifying and providing appropriate short-term training to maximise local employment outcomes. To maximise training success, training and employment for the KGGP Project will need to be linked to longer-term sustainable employment opportunities in Nhulunbuy. As such, Pacific Aluminium will work to define clear links between training, short-term pipeline construction employment, and longer-term sustainable employment at the Company's Gove operations (or with other local employers).

Opportunities for short-term and casual employment will also be explored. The KGGP will meet with various ranger groups along the pipeline route to identify opportunities for Traditional Owners to secure survey work and other involvement in the Project delivery.

3.3.1.2 BUSINESS

Stakeholder engagement undertaken to date indicates that stakeholders are largely aware of the specialised workforce requirements for the pipeline. As such, many stakeholders identified that the key economic opportunities of the Project may be more indirect, specifically through business and procurement opportunities, and indirect (sub-contractor) employment.

In particular, opportunities around the provision of the following ancillary Project functions may be important to local businesses:

- Workforce camp management.
- Trench preparation.

- Water cartage.
- Movement of pipes.
- Trucking and transport.
- Equipment hire.
- Cultural heritage and environmental services.

Business development outcomes from past projects in the area give an indication of some of the challenges and barriers that could present in relation to the KGGP Project, including:

- Local business tender for works at inflated prices.
- Limited capacity among local firms to tender.

Consultation indicated that strong interest from the local business community would be likely, particularly in the town of Katherine. Katherine Town Council is currently working to position itself as a 'Mine Services Centre' and emphasised the strong interest among the local business community to receiving further information on potential opportunities. Both the Roper Gulf and East Arnhem Shire Councils, and impacted pastoral property owners expressed interest in Project opportunities such as civil works. It was also identified that some local Aboriginal organisations may be interested in establishing Joint Ventures with experienced contractors to be able to provide a range of ancillary services to the Project.

It is likely that many of the existing businesses in the local area may lack the capacity to become engaged in the Project, and so a range of management strategies will need to be applied to maximise opportunities over the short- and long-term.

In particular, a Local Procurement Plan will be developed to ensure that fair and reasonable opportunities are provided for local business, industry and labour. Pacific Aluminium will work closely with the primary contractor to develop this Plan and to identify any direct local employment opportunities and packages of works that could be sub-contracted to local providers. This will be initiated through a detailed capabilities matching exercise, where the existing availability and capacity of local businesses will be matched against the requirements of the Project. Pacific Aluminium will also work closely with local businesses to facilitate appropriate Joint Venture arrangements with larger, more experienced companies, to maximise local outcomes.

Where feasible, the potential for specific local businesses to be involved in Project activities will be assessed and these businesses may be proactively approached and encouraged to tender. The primary contractors will also assess works to be sub-contracted out and the ability to extract smaller, particular packages of works that could be delivered locally.

During SIA consultation, stakeholders also emphasised the importance of having early and accurate information about potential supply chain opportunities. Pacific Aluminium will engage with local industry groups, such as the Chamber of Commerce and Contractor Accredited Limited to provide this level of information and facilitate connections with local businesses. Information will be published in accessible places and through existing networks to advise on likely packages of work to be tendered, tendering timeframes, prequalification requirements and tendering processes. The objective of this level of engagement is to ensure that local businesses are aware of procurement opportunities and have a realistic understanding of their capacity to tender.

Expectations around indirect business opportunities also need to be managed. The Nhulunbuy Corporation advised that there were expectations in the town that the Project would result in flow on business for retail outlets. Given the small operations workforce, and the fact that the construction workforce will largely be located outside of the town, this is unlikely to occur.

The Project may offer some security to local businesses in terms of the ongoing operation of the refinery. The Nhulunbuy Corporation also advised that some local business were reportedly struggling and there appeared to be very little interest from new businesses, particularly in the retail sector, to establish in the town. The Project will engage with the existing business community and provide information on timeframes and workforce numbers so that accurate assumptions around likely increases in business can be made. Information will also be made available in response to any requests from prospective business operators.

3.3.2 Land and country

A summary of key potential Project impacts as they relate to issues of land and country are provided in the table which follows. Management measures for mitigating these impacts are described in Section 3.2 of the SIMP (Appendix 1).

Table 3-2 Impact Summary – Land and Country

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Increased access of traditional lands by workers and other non-local people without necessary permits	Construction Operations	Negative	**Medium**	Low
Potential for sacred sites and significant areas to be disturbed or damaged due to increased access	Construction	Negative	Low	Low
Potential for negative environmental impacts to features of value to communities, e.g. waterfalls, springs, billabongs and river crossing and catchment areas.	Construction	Negative	**Medium**	Low

3.3.2.1 Aboriginal land access and sacred sites

Land ownership and land rights have the potential to be a sensitive issue along the pipeline route. Aboriginal people traditionally have a very strong connection to land. The health of the land and water is therefore central to their culture and the people have a responsibility to protect this land. In the Project area, the pipeline route is predominantly situated on Aboriginal Land Trust Land, where persons wishing to enter the area must seek permission from the landowners. During consultation for the SIA, stakeholders expressed concern that an increased level of access into local communities may increase the likelihood of people (including workers and tourists) accessing Aboriginal land without the appropriate permits. This may have an effect on the wellbeing of local Aboriginal people, and may cause unnecessary stress and anxiety if the relevant protocols are not diligently followed for all direct and indirect Project activities.

Consultation with various stakeholders also indicated that the preservation and protection of sacred sites along the pipeline is of paramount importance. Concerns were expressed that sacred sites may be at risk due to increased accessibility resulting from increased road use and additional access tracks to the pipeline.

To date, all Project-related land access and land use negotiations have been undertaken through the NLC as the independent statutory authority under the *Aboriginal Land Rights (Northern Territory) Act 1976*. Pacific Aluminium will continue to work with the appropriate statutory authorities for all Project-related activities. In addition, a strict Land Access Protocol will be developed and enforced for all Project and contractor personnel. This Protocol will be developed in consultation with the NLC and Traditional Owners, and will clearly outline land access protocols, and the direct consequences should these protocols be breached. Land access protocols will be communicated to local communities to provide assurance that measures have been put in place to address these concerns.

Pacific Aluminium will also work with the Aboriginal Areas Protection Authority (AAPA) and the NLC to develop the process and timeframes for reviewing sacred sites along the pipeline route and ensure all necessary permits and authority certificates are in place. The location of sacred sites will be a major determinant in the pipeline route.

3.3.2.2 ENVIRONMENTAL VALUES

Concerns around the potential environmental impacts on local land and water resources were also presented as a significant community issue during consultations. Traditionally, Indigenous communities have strong community ties and connection to country, particularly sacred sites and natural resources. As a result, any impact upon sacred sites, the communities' ability to conduct traditional ceremonies or activities or natural resources is likely to create tension between communities and the Project. In particular, communities were concerned that increased access to, and construction activities on, traditional lands may damage or impact on features which are of key environmental significance to communities, e.g. billabongs, springs, waterfalls.

In a submission made in response to the draft EIS Guidelines in December 2012, stakeholders have already expressed concern regarding the management of:

- Yellow crazy ants
- The endangered Gove crow butterfly, which may inhabit areas close to the pipeline route
- Weeds
- Cultural heritage

Key to these concerns is that there may be a low level of understanding among communities about what the pipeline area will look like during and post-construction. There is also a potential for community concerns to increase if there is not a full understanding of the construction process, as this is when the most obvious, and potentially confronting, impacts may occur in terms of impact on land and environment. If not adequately addressed, these concerns have the potential to result in community anxiety, and potentially opposition, to the Project.

Communities may also be concerned about other potential environmental and amenity impacts associated with construction, particularly around noise and dust impacts (addressed in more detail in the relevant chapters of the EIS).

Building a solid community understanding of the Project and relevant construction activities will be critical to address these concerns. As such, Pacific Aluminium will conduct community information sessions along the pipeline route in partnership with the NLC. These information sessions will include presentation of visual materials of what the construction works will look like and also how the pipeline area will appear once it is built, covered over, and re-vegetated. Pacific Aluminium will ensure that an environmental consultant is present at these information sessions, so that technical questions and issues can be directly addressed, and the use of equipment can be demonstrated. A local interpreter will also be available at all information sessions so that communities are able to communicate issues in their own language, and so that detailed technical information can be translated appropriately. Where relevant, local rangers will also attend and participate in at information sessions.

Ongoing Project stakeholder engagement protocols will be designed to ensure ongoing communication throughout construction and beyond (refer to the SIMP for the Project).

3.3.3 Community safety

A summary of key potential Project impacts as they relate to community safety issues is provided in Table 3-3. Management measures for mitigating these impacts are described in Section 3.3 of the SIMP (Appendix 1).

Table 3-3 Impact Summary – Community Safety

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Heightened road safety risk due to increased movement of traffic and machinery through the Project area	Construction Operations	Negative	**Medium**	**Medium**
Potential risk of gas leaks and explosions	Construction Operations	Negative	**Medium**	Low
Theft and vandalism of Project infrastructure and equipment	Construction Operations	Negative	Low	Low
Increased incidence of communicable disease due to population influx	Construction	Negative	Low	Low

During consultation undertaken for the KGGP SIA local stakeholders raised a number of concerns around the Project impacting safety in the community, including in terms of:

- Heightened road safety risks due to increased vehicle traffic and damage to road surfaces.
- Potential increase in anti-social behaviours such as alcohol, substance abuse due to increased availability of these substances.
- Increased the spread of communicable diseases.
- Increased risk of gas leaks and explosions.
- Increased theft and vandalism.

The East Arnhem Shire Council communicated concern that traffic generated by the Project may worsen the condition of local road surfaces, thereby decreasing road safety for communities. It is expected road safety will be a concern for local communities. In particular, stakeholders who reside in the area and regularly use the road expressed that increased traffic could increase road accidents and injuries, as drivers may be unfamiliar with sharing the roads with trucks, and truck drivers may have difficulty seeing Indigenous people walking

or camping beside the road, particularly at night. This potential impact would be particularly prevalent during construction, where a higher number of equipment and materials delivery vehicles would be traversing the Project area. Over operations it is likely that only a small number of maintenance vehicles would need to access the area.

To address potential road safety issues, the Project will develop a Traffic Management Plan which will outline strategies to minimise the Project's impact on road infrastructure and safety, such as identifying suitable times to transport equipment. Pacific Aluminium will communicate these strategies to the community in advance of construction and throughout the Project's construction period to ensure that communities are aware of and familiar with the type of traffic to be expected. Road safety awareness education will also be included during community visits or information sessions, so that communities can be familiarised with common road signs and the types of vehicles and equipment that will be moving through the area. Pacific Aluminium will also explore options to collaborate with the NLC and the Northern Territory Road Traffic Safety Council to implement a visual and/or bilingual road safety awareness campaign to inform communities of traffic movement during construction.

Currently, substance abuse is an existing social issue in a number of communities along the pipeline route. Beswick in particular has an escalating problem with petrol sniffing. Both Roper Gulf and East Arnhem Shire Council expressed concern that the Project and associated population and traffic influx could increase the availability of alcohol and substances (e.g. petrol, glue), which could negatively impact on community health and safety. In this regard, Pacific Aluminum will work with local councils and enforce strict workforce management strategies around alcohol use and bringing in substance materials to ensure that the Project does not exacerbate the current situation. The Project will also ensure that any petrol or other material stored on site is locked securely, to prevent theft.

The Northern Territory Department of Health also raised a number of concerns around workforce and community safety, including the potential for an increase in communicable diseases, such as sexually transmitted diseases (STDs), should the FIFO workforce stop in transit at Katherine, Nhulunbuy or Darwin. To mitigate potential health risks, the Project will develop a comprehensive Health Management Plan which will be communicated with the Department of Health and relevant Councils (refer to Section 3.3.5.2 for more information on health impacts).

It is likely that communities along the pipeline route may be concerned about the possibility of gas leaks or explosions. In particular, a fire or explosion could impact local people's ability to carry out traditional practices and activities, while also posing a direct safety risk to people nearby. Conversely, traditional practices such as burning may increase the risk of an explosion. It will be important for the Project to manage community anxiety around these issues and to transparently communicate the actual risk of such an event occurring, the emergency management strategies in place should this type of event occur, and what implications this has for community practices. Pacific Aluminum will communicate these strategies to communities, using an interpreter during community information sessions and through communicating the Project's Emergency Management Plan.

Community concern around the potential for theft or vandalism of Project property and materials is also likely to be prevalent along the pipeline route. The East Arnhem Shire Council noted during consultation that vandalism is already quite prevalent across the broader study area, and it is possible that KGGP Project infrastructure could be vulnerable to vandalism. Pacific Aluminum will implement a range of security measures to prevent vandalism occurring and will work with local police to handle any incidents sensitively.

3.3.4 Social values and community cohesion

A summary of key potential Project impacts as they relate to issues of social values and community cohesion are provided in the table which follows. Management measures for mitigating these impacts are described in Section 3.4 of the SIMP (Appendix 1).

Table 3-4 Impact Summary – Social Values and Community Cohesion

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Continued viability and vitality of Nhulunbuy community through sustained operation of the refinery	Construction Operations	Positive	**High**	**High**
Increase in community conflict and anxiety related to use of traditional lands and introduction of non-local workforce	Construction	Negative	**Medium**	**Low**
Increase in the occurrence of social ills (e.g. alcohol and substance abuse) through the introduction of non-resident workers	Construction	Negative	**Medium**	**Low**

Nhulunbuy currently serves as a key service centre for the Northern Territory, Commonwealth and local government services. The ongoing viability and vitality of this town is therefore linked to local communities' sense of security and wellbeing. The viability of Nhulunbuy as a town is intrinsically linked to the refinery, the ongoing operation of which is now attached to the ability to access an alternate long term energy option in the form of gas from the Katherine to Gove Gas Pipeline. Anecdotal evidence indicates that uncertainty around the future of the refinery has impacted on the social values of the Nhulunbuy community, particularly the local business community. The KGGP Project therefore facilitates an important benefit for local communities in ensuring the ongoing operation of the refinery, and offering some security to the local and surrounding communities that the town's function as a regional hub will remain viable.

In Nhulunbuy, the recent uncertainty around the future of the refinery has impacted on the town's sense of community. Over the past 12-months, the Nhulunbuy Corporation noted an increase in graffiti, a decrease in social harmony and change in the type of people arriving into the town. The perceived transience of the local population has also increased, with the perception that people move into the area only for a short while to work at the mine and refinery.

As previously discussed, many of the communities along the pipeline route are isolated, small and comprised predominantly of Aboriginal Australians. These communities hold a strong connection to their land and their community, and are marked by distinctive language, cultural, and social practices. Given their remote location, the smaller communities may have had little exposure to other cultural influences and could be sensitive to the presence of newcomers in the area and to any changes in social interactions or traditional network structures.

Given this social context, the introduction of a predominantly non-local workforce may impact on existing social values and levels of community cohesion. During consultation, stakeholders expressed concern that the introduction of a predominately single male FIFO workforce may impact community cohesion by exacerbating existing community issues and increasing:

- Competition within communities for employment and/or training opportunities with the Project.
- Community anxiety related to an increased number of people accessing traditional lands.
- Tension and/or jealousy against the newly introduced non-Indigenous workforce.
- Conflicts between Indigenous and non-Indigenous people if cultural awareness and sensitivity is low.
- Domestic violence against females in the community.
- Prevalence of social ills, such as alcohol consumption, petrol sniffing, sniffing of flammables (aerosols and ink sprays), etc.

Concerns around alcohol and substance abuse were particularly prevalent during consultation for the SIA, and it was expressed that strict and enforceable codes of conduct would need to be imposed on FIFO workers to ensure that existing issues are not exacerbated by the Project workforce. It is likely that impacts on social values and community cohesion would be most pronounced during the construction phase of the Project, given that the pipeline would require only a very small workforce of 10 people during operations.

The accommodation strategy of the Project aims to mitigate some of these potential issues. It is anticipated that the majority of the construction workforce will be housed at camps along the pipeline route. These camps will be self-contained to limit the requirement for workers to interact in local communities, and it is likely that the camps will serve alcohol which will avoid workers going into local bars to purchase alcohol. The primary contractor for the Project will also ensure that FIFO workers enter and exit the Project site via the most direct airline route possible, thus limiting 'stay overs' in local communities and avoiding potentially negative interactions in regional towns. Access and egress from camps will be strictly controlled.

As part of its management plan, Pacific Aluminium will also implement a range of workforce management strategies. In particular, a workforce Code of Conduct will be developed to manage the behaviour of the workforce inside and outside of working hours. This Code will include zero tolerance policies on drug and alcohol abuse, and will apply to direct and indirect (sub-contracted) employees. The implementation of the Code will be strictly enforced by appropriate disciplinary action and employment consequences if any breaches are reported. Where practical, Pacific Aluminium will engage with the NLC and other local stakeholders during the development of the Code of Conduct to identify particular behaviours that should be encouraged / discouraged among the workforce. Physical controls will be placed over attractive items that may lead to increased health issues such as substance abuse

The non-residential workforce will also be required to comply with camp rules and regulations, the development of which will include consideration of concerns raised by local communities.

To improve the workforce's interaction with communities, cultural awareness training will also be implemented with the Project workforce. This will be incorporated into all employee induction training, and will also be rolled out along the pipeline route as different communities and cultures are encountered as the pipeline construction progresses. This training may cover issues such as respect for cultural differences, access to sacred sites, and expected cultural norms and traditions.

3.3.5 Infrastructure and Services

A summary of potential Project-related impacts on local infrastructure and services is provided in the table which follows. Management measures for mitigating these impacts are described in Section 3.5 of the SIMP (Appendix 1).

Table 3-5 Impact Summary – Infrastructure and Services

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Decreased housing and accommodation affordability and availability in local communities	Construction	Negative	**Medium**	Low
Increased pressure on local health and emergency services due to increased non-resident population	Construction	Negative	**Medium**	Low
Potential disruption to the functioning of other industry infrastructure	Construction	Negative	Low	Low

During consultation for the SIA, key stakeholders raised a number of concerns around the ability of existing local infrastructure and services to respond to any changes in demand associated with the Project. In particular, concerns around the local housing and accommodation market, and local health service provision were raised most strongly.

3.3.5.1 Housing and accommodation

As described in the baseline assessment, there are a number of existing issues around the provision of suitable and affordable housing in the study area. This was noted as a concern across all affected Local Government Areas, with stakeholders reporting pressures of over-crowding in local communities, and difficulties in accommodating visitors or tourists over the short-term. Local rental rates were also reported to be high (particularly in Katherine and Nhulunbuy), making it difficult for local families and new workers to secure affordable housing. Local Shire Councils also stated that land release and development processes can be a constraint to new housing development, and in Nhulunbuy this is compounded by issues of electricity and water supply to areas outside of the town.

Although the construction phase of the Project will lead to an influx of approximately 780 workers, the majority of these will be FIFO workers who are housed in construction camps along the pipeline route. The increased demand for residential housing during construction will therefore be minimal, but is likely to be concentrated in Katherine or Nhulunbuy where the housing markets are very constrained.

Over the longer term, and given the small size of the operations workforce, the operation of the pipeline is not likely to result in any increased housing demand in local towns.

Any potential impacts on housing availability and affordability, particularly from a cumulative perspective, will be monitored in consultation with local Shire Councils so that emerging issues can be quickly identified and addressed. The potential for the construction of the pipeline to coincide with the construction of the Mount Todd mine has already been noted by some stakeholders as likely to result in a more significant impact on housing and accommodation issues in Katherine.

3.3.5.2 HEALTH SERVICES

Potential Project impacts on existing health services were also raised strongly during consultation for the Project. As discussed in Section 2.4.2, the capacity of existing service providers to meet increased demand, particularly during an emergency event, was a prevalent issue given current capacity constraints. While there are hospitals in both Nhulunbuy and Katherine, as well as health centres and community clinics along the pipeline route, the ability of these services to meet increased health service demands, particularly of the construction workforce, was questioned. Local stakeholders were particularly concerned that the Project would need to demonstrate its own capacity to deal with emergency events, and would also need to provide detailed management measures around dealing with mental health, drug, alcohol, sexual health, and other medical issues within the workforce. To the extent possible, all of these issues would need to be dealt with on-site to minimise any potential impacts on local service provision, which is already constrained in some areas.

In this regard, Pacific Aluminium will liaise with the Northern Territory's Department of Health to develop a Health Management Plan. This Plan will describe the level of medical and emergency services to be provided at the Project site, as well as how emergency medical issues will be dealt with. The primary contractor for the Project will need to adhere to this Plan, and the contents will be communicated to Project and contractor employees to ensure it is implemented across all levels. Pacific Aluminium will also ensure that a qualified emergency response team comprising of paramedics and associated vehicles and a health team comprising of doctors and nurses will service the construction workforce and deal with minor workforce health and medical requirements. Any requirement for emergency medical evacuation will be managed through an arrangement with a specialist medical evacuation company.

3.3.5.3 ROAD INFRASTRUCTURE

Through consultation undertaken for the SIA, stakeholders expressed an expectation that the Central Arnhem Road, or parts thereof, may be upgraded as part of the Project. Stakeholder sentiment on any potential upgrade was mixed. In particular, road upgrades attract ongoing maintenance costs and local council representatives have questioned the sustainability of upgrading a road if maintenance activities will eventually become a council responsibility. Issues associated with increased access to traditional lands are also of concern in relation to the road upgrade, as outlined in Section 3.3.2.1.

The Project will aim to manage expectations around any likely upgrades to the road as an upgrade is not within Project scope. Measures, including elements of the Project's Traffic Management Plan, will be put in place to ensure Project traffic and use of the road does not result in a detrimental impact on the road.

3.3.5.4 IMPACTS ON OTHER INDUSTRY INFRASTRUCTURE

Competing infrastructure requirements have the potential to impact on other stakeholders, particularly in Katherine where the industry base is wider. The Department of Defence in particular has noted the necessity for Project infrastructure to be designed with consideration for the Department's external planning requirements, and also to ensure that local services, such as the power supply, is not impacted by the Project's requirements to the detriment of residents and other organisations or industries that are reliant upon that source.

The final design and location of the pipeline and all associated infrastructure will be completed with full consideration of these issues. Environmental controls, such as buffers and monitoring, will be developed to mitigate any impacts on surrounding industry, services and associated infrastructure.

The long term operation of the pipeline is not likely to result in increased demand on infrastructure and services in the Project area beyond current demand levels associated with the operation of the refinery. This is due to a minimal operations workforce, which will be located at Katherine and Nhulunbuy.

3.3.6 Unplanned closure

A summary of the potential socio-economic impacts associated with unplanned closure of the pipeline, or non-completion of construction of the pipeline, is provided in the table which follows. Management measures mitigating these impacts are described in Section 3.6 of the SIMP.

Table 3-6 Impact Summary – Unplanned Closure

Potential impact	Phase	Type	Significance Pre-Mitigation	Significance Post-Mitigation
Unforeseen closure event or non-completion of the pipeline project	Decommissioning	Negative	**High**	**Medium**

As per the EIS Guidelines for the KGGP Project, Pacific Aluminium has considered the risks if the Project is forced to cease operations earlier than predicted or indeed if the construction of the pipeline is not completed as planned.

Given the criticality of the Project in supplying an energy source to the existing refinery at Gove, the closure / non-completion of the pipeline would directly result in the closure or 'mothballing' of the refinery. As previously discussed, Rio Tinto's Strategic Review of this alternative indicated that the closure of the facility would have a range of direct and indirect socio-economic impacts for local and regional communities. In particular, loss of job opportunities, local business and income opportunities, and changes to the local property market would likely be significant, and would have a considerable knock-on effect for local and regional households.

To manage these potential impacts, and in line with Pacific Aluminium's closure planning commitments, the Project will develop a Closure Management Plan for the Katherine to Gove Pipeline.

In line with Pacific Aluminium's Social Risk Analysis Guidance, the Project will also maintain a social risk register on site, which will proactively identify social risks associated with unplanned closure so that these can be appropriately managed in a timely manner.

3.4 Impact Assessment Summary

Table 3-7 provides a summary of the key socio-economic impacts associated with the construction, operation and decommissioning of the KGGP Project.

Table 3-7 Impact and Residual Impact Summary

	Type	Significance	
		Before Mitigation	After Mitigation
Economic development and employment			
Sustaining the economic and employment benefits of the refinery at Gove	Positive	**Very high**	**Very high**
Direct employment opportunities for local communities	Positive	**Medium**	**Medium**
Direct training and development opportunities for local communities	Positive	**Low**	**Medium**
Procurement and contracting opportunities for local businesses	Positive	**Low**	**Medium**
Land and country			
Increased access of traditional lands by workers and other non-local people without necessary permits	Negative	**Medium**	**Low**
Potential for sacred sites and significant areas to be disturbed or damaged due to increased access.	Negative	**Low**	**Low**
Potential for negative environmental impacts on features of value to communities, e.g. waterfalls, springs, billabongs and river crossing and catchment areas	Negative	**Medium**	**Low**
Community safety			
Heightened road safety risk due to increased movement of traffic and machinery through the Project area	Negative	**Medium**	**Medium**
Potential risk of gas leaks and explosions	Negative	**Medium**	**Low**
Theft and vandalism of Project infrastructure and equipment	Negative	**Low**	**Low**
Increased incidence of communicable disease due to population influx	Negative	**Low**	**Low**
Social values and community cohesion			
Continued viability and vitality of Nhulunbuy community through sustained operation of the refinery	Positive	**High**	**High**
Increase in community conflict and anxiety related to use of traditional lands and introduction of non-local workforce	Negative	**Medium**	**Low**
Increase in the occurrence of social ills (e.g. alcohol and substance abuse) through the introduction of non-resident workers	Negative	**Medium**	**Low**
Infrastructure and services			
Decreased housing and accommodation affordability and availability in local communities	Negative	**Medium**	**Low**
Increased pressure on local health and emergency services due to increased non-resident population	Negative	**Medium**	**Low**
Potential impacts on the functioning of other industry infrastructure through Project placement and increased demand for services	Negative	**Low**	**Low**
Unplanned closure			
Unforeseen closure event or non-completion of the pipeline project	Negative	**High**	**Medium**

4 CONCLUSION

Pacific Aluminium proposes to construct a 600 km natural gas pipeline from the Northern Territory town of Katherine to its bauxite mine and alumina refinery at Gove, in north east Arnhem Land. A Social Impact Assessment (SIA) was undertaken to assess the socio-economic benefits and impacts of this Project on regional and local communities. The SIA included undertaking detailed desktop investigations of existing statistical data and reports, as well as conducting consultation with key stakeholders that may be affected by, or have an interest in, the Project. Pacific Aluminium is committed to ongoing consultations throughout the EIS period and will continue to meet with stakeholders in relation to the SIA and the implementation of the Social Impact Management Plan.

The SIA found that the Project would have a range of direct and indirect benefits for local communities. Directly, the creation of employment opportunities would be an important benefit for the broader economy and labour force, although opportunities will be short-term over the construction phase (approximately 12 months) and would likely involve a highly specialised workforce. A range of appropriate and targeted management measures would therefore need to be applied to ensure that a degree of benefit is experienced by local and affected communities. Indirectly and over the longer term, the primary benefit of the Project would be through its role in sustaining the ongoing operations of Pacific Aluminium's refinery at Gove. This would facilitate the ongoing viability of approximately 1,100 jobs and a range of associated local business and household income opportunities.

Conversely, some potential negative impacts may also be experienced by local and regional communities. The majority of these would be particularly prevalent during the construction phase and over the short-term, where construction activities and the presence of a primarily non-resident workforce may impact on community wellbeing. In particular, stakeholders raised concern about increased unauthorised access to traditional lands, as well as the possibility of local communities not having the capacity or capability to engage in Project-related opportunities. It was also raised that the presence of a non-local workforce, and increased non-local access into the area, may impact on community safety through increased road traffic risks and the potentially increased availability and use of 'substances and alcohol.

Over the longer term during operations, it is not likely that significant negative impacts will be experienced as ongoing maintenance activities will require the presence of only a small workforce and should be minimally invasive.

Pacific Aluminium will apply a range of management and mitigation measures to enhance Project benefits and minimise negative impacts. These are detailed in the Social Impact Management Plan (SIMP) for the Project.

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Appendix 1 Social Impact Management Plan

Katherine to Gove Gas Pipeline

Social Impact Management Plan

CONTENTS

ACRONYMS AND ABBREVIATIONS

ABS	Australian Bureau of Statistics
APIA	Australian Pipeline Industry Association
CSG	Coal Seam Gas
EIS	Environmental Impact Statement
EMP	Environmental Management Plan
FIFO	Fly-In-Fly-Out
HR	Human Resources
KGGP	Katherine to Gove Gas Pipeline
LNG	Liquefied Natural Gas
NLC	Northern Land Council
SIA	Social Impact Assessment
SIMP	Social Impact Management Plan

6 INTRODUCTION

This document is the Social Impact Management Plan (SIMP) for Pacific Aluminium's (Alcan Gove Pty Limited) Katherine to Gove Gas Pipeline (KGGP) Project ('the Project'). The SIMP guides the management of social impacts identified through the Environmental Impact Statement (EIS) process, and is a living document that will be regularly updated to respond to changing priorities and dynamics.

The SIMP is a requirement of the KGGP EIS Guidelines (Section 6.6.3) which stipulate that a Project SIMP should be developed which:

- Is an all-encompassing document to manage social issues.
- Highlights and mitigates potential direct and indirect social risks.
- Provides methods to analyse, monitor and manage the Project's social consequences.
- Provides mitigations to protect and safeguard regional communities and the economy.

As such, this SIMP is designed to provide a concrete suite of management actions, attached to specific performance indicators which can be monitored and reported over time. This will provide a transparent and measurable way for the Project's social performance to be tracked across all phases of the Project's lifecycle.

As described in the Project's Social Impact Assessment (SIA), the most significant impacts of the Project are likely to be experienced in the construction phase, when land clearing, workforce, transportation, and building activities are occurring. Over operations, the Project will require minimal maintenance activities and a very small workforce will be required. As such, this SIMP is focused on management actions for the construction phase, which will primarily occur during 2014.

6.1 Project Overview

Pacific Aluminium proposes to construct a natural gas pipeline to its bauxite mine and alumina refinery at Gove, in north east Arnhem Land, Northern Territory. The pipeline is proposed to commence approximately 20 km south of Katherine and follow a north easterly route for approximately 600 km to the existing Pacific Aluminium alumina refinery at Gove.

The pipeline will be constructed within an approved 30 m wide construction corridor, which will be located within a 100 m wide pipeline corridor. At intervals along the pipeline, supporting infrastructure including five main line valves, access tracks, three scraper stations and one compressor station will be established.

Depending on statutory approvals and weather conditions, construction is planned to be undertaken in the dry season of 2014, with a construction workforce of approximately 780 workers. This workforce will likely work a 28-day-on, 9-day-off Fly-In Fly-Out (FIFO) roster, and the majority of workers will be housed in five construction camps along the pipeline route. If required, the existing Pacific Aluminium construction camp at Gove and commercial accommodation in the Katherine area may be also used by a small proportion of the construction workforce.

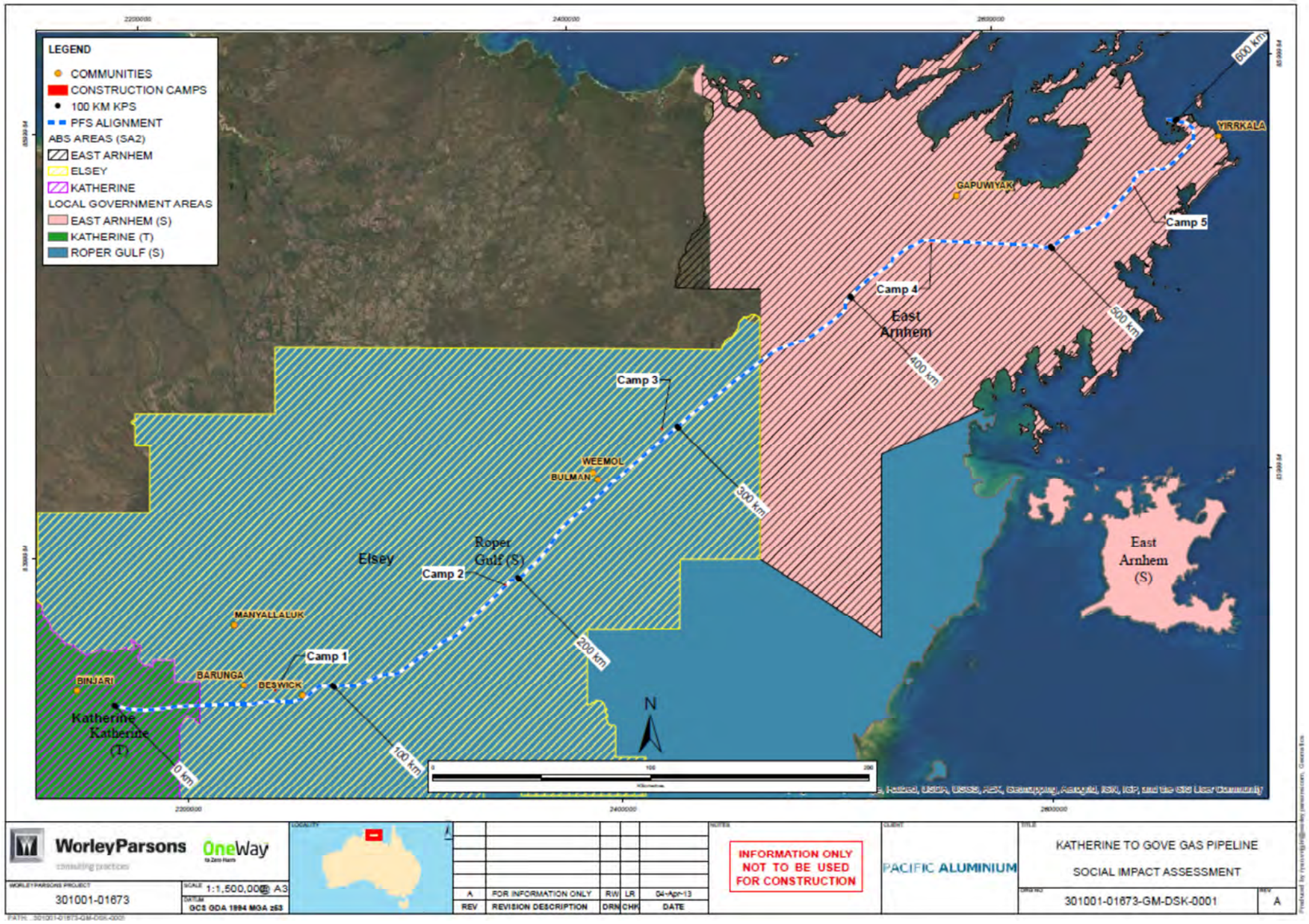
During operations it is anticipated that only a small number of personnel (approximately 10 employees) will be required to operate and maintain the pipeline. This workforce will be

provided by a contracted operations and maintenance service provider, and will likely be resident in either Katherine or Nhulunbuy over the operations period of approximately 50 years.

6.2 Study Area Socio-Economic Characteristics

The proposed pipeline route will traverse communities across the Roper Gulf and East Arnhem Shire Councils. The Katherine and Nhulunbuy localities are likely to be most significantly affected by the Project, given their location on either end of the pipeline route and their function as regional service centres. Other communities along the pipeline route include Rockhole, Barunga (Bamyili), Bulman (Weemol), Wugular (Beswick), Manyalluluk, Binjari, Yirrkala, and Gapuwiyak (Figure 6-1).

Figure 6-1 Study Area Communities



The study area localities are characterised by a mix of pastoral farming, mining and tourism land uses. The communities are largely reflective of other Indigenous communities in the Northern Territory and Australia, although the towns of Katherine and Nhulunbuy noted a very different socio-economic profile compared to other smaller Indigenous communities along the pipeline route.

In particular, data from 2011 Australian Bureau of Statistics (ABS) Census, recorded the following key characteristics of study area communities:

- The towns of Katherine and Nhulunbuy recorded a population of 6,998 and 4,287 people respectively in 2011, while other communities along the pipeline route were small, and ranged in population between 105 and 889 people.
- The Indigenous component of pipeline communities ranged between 75% and 100% of the total population. Katherine and Nhulunbuy had smaller Aboriginal populations, at 26% and 7% of the population respectively.
- The study area recorded very young median ages (generally between 21 and 27 years), particularly in smaller Aboriginal communities.
- Local communities had large households, when compared with Northern Territory averages.
- Smaller communities along the pipeline route recorded low education and Grade 12 completion levels, while education in Katherine and Nhulunbuy was comparable with, or higher than, the Territory average.
- Household income levels were significantly higher in Nhulunbuy ($2,565 per week) than in other pipeline communities where income levels were much lower than the Territory average. This is reflective of strong labour force participation and reliance on the manufacturing employment sector (including the existing Pacific Aluminium refinery at Gove).
- Unemployment levels were very low in Nhulunbuy (less than 2%) and in Katherine (4%), compared to other pipeline communities where unemployment was significantly higher at up to 29%. Consultation confirmed that a significant number of households are dependent on Commonwealth Government Centrelink payments.

6.3 SIMP Methodology

The KGGP SIMP has been structured to reflect the objectives of a number of Pacific Aluminium documents, including the company's 'Communities Policy and Standard' and it's 'Social Risk Analysis Guideline'.

In particular, social impacts identified as part of the EIS have been assessed against a tailored risk framework to identify which benefits and issues are likely to be most significant during Project construction and operation. Impacts that were identified as being significant were then grouped into categories, so that targeted social impact management actions could be developed against these categories.

Mitigation and management strategies have been developed based on a hierarchy of controls, where Pacific Aluminium seeks first to avoid, then mitigate, then minimise, and only then compensate for the range of identified impacts. Where Project impacts are positive in

nature, actions have also been proposed to optimise or enhance these benefits for local and regional communities.

The SIMP has been developed in consultation with a number of key stakeholders as part of the SIA process. Engagement aimed to identify community and stakeholder suggestions for potential mitigation measures, as well as where implementation of management strategies could be achieved through partnership with local role-players. Where relevant, these partnerships or shared responsibilities will be incorporated into the social management plans over time so that maximum local benefit can be achieved.

7 SOCIAL IMPACT SUMMARY

7.1 Key Stakeholder Issues

The SIA process for the KGGP Project identified and assessed a range of Project benefits and impacts. As part of this process, key local and regional stakeholders were consulted to identify potential issues and concerns to be addressed as part of the SIMP.

The key Project benefits and potential impacts that were raised included:

- The economic and social benefits of the Project supplying gas to Gove and allowing Pacific Aluminium's existing refinery to remain open and viable; thus sustaining existing job, procurement, and social opportunities over the long term.
- The direct employment and procurement opportunities of the Project over the short-term, and the need for communities to have early access to information about the types of opportunities available.
- The need for the Project to manage community expectations around the nature and scale of benefits that will be available locally (noting that these opportunities will likely be short-term and highly specialised in nature).
- The potential for the Project to place pressure on existing social service provision, particularly in the health sector, and the preference for the Project to be self-sufficient in providing these types of services to the workforce.
- The potential for the presence of a non-local workforce, and increased access to communities, to exacerbate current issues around alcohol abuse and use of other substances.
- The potential, particularly during construction, for increased vehicle movements and traffic through the local area, impacting on road conditions and community safety.
- The potential for the Project workforce to impact on local housing markets (availability and affordability) which are already highly constrained.
- The need for the Project to manage workforce behaviour and interactions with the local community, and ensure no unauthorised access to traditional lands.
- The need for the Project to provide all Project information materials in a visual way and in a language and format that is understandable to local communities.

7.2 Key Social Benefits and Impacts

The SIA for the Project included an impact rating and ranking exercise to determine the relative significance of the range of opportunities and benefits identified as part of the EIS process. Table 7-1 provides a summary of these impacts and opportunities *after* the application of the mitigation / enhancement and management measures described in this SIMP.

Table 7-1 Summary of Relative Social Impacts and Opportunities

Positive Impacts	Negative Impacts
VERY HIGH	**VERY HIGH**
Sustaining the economic and employment benefits of the refinery at Gove.	
HIGH	**HIGH**
Continued viability and vitality of Nhulunbuy community through sustained operation of the refinery.	
MEDIUM	**MEDIUM**
Direct employment opportunities for local communities.	Heightened road safety risk due to increased movement of traffic and machinery through the Project area.
Direct training and development opportunities for local communities.	Unforeseen closure event or non-completion of the pipeline Project.
Procurement and contracting opportunities for local businesses.	
LOW	**LOW**
	Increased access of traditional lands by workers and other non-local people without necessary permits.
	Potential for sacred sites and significant areas to be disturbed or damaged due to increased access. Increased pressure on local health and emergency services due to increased non-resident population.
	Potential for negative environmental impacts on features of value to communities, e.g. waterfalls, springs, billabongs and river crossing and catchment areas.
	Potential risk of gas leaks and explosions.
	Theft and vandalism of Project infrastructure and equipment.
	Increased incidence of communicable disease due to population influx.
	Increase in community conflict and anxiety related to use of traditional lands and introduction of non-local workforce.
	Increase in the occurrence of social ills (e.g. alcohol and substance abuse) through the introduction of non-resident workers.
	Decreased housing and accommodation affordability and availability in local communities.
	Potential impacts on the functioning of other industry infrastructure through Project placement and increased demand for services.

8 SOCIAL IMPACT MANAGEMENT

Pacific Aluminium has developed mitigation and management strategies for each of the key social benefits and impacts identified in the previous section. To simplify this process, and increase practical implementation, action plans have been developed according to six broad impact categories (as described in the SIA), namely:

- Economic development and employment.
- Land and country.
- Community safety.
- Social values and community cohesion.
- Infrastructure and services.

Management measures for each of these key areas are described in the sections which follow.

8.1 Economic Development and Employment

8.1.1 Impact summary:

The Project will provide a range of direct and indirect economic and employment benefits for local and regional communities. In particular, the Project will facilitate the continued operation of Pacific Aluminium's refinery at Gove, thus sustaining approximately 1,100 direct long-term jobs. Direct construction employment opportunities will also be created for approximately 780 people over a 12-month duration. Longer-term operational employment will be provided for approximately 10 workers.

Direct and indirect supply chain opportunities will also be important Project benefits. These opportunities are likely to be short-term in nature and will be experienced primarily during the construction phase of the Project.

8.1.2 Management objective/s:

Maximise local access to short-term construction employment and procurement opportunities.

8.1.3 Management strategy:

8.1.3.1 ENHANCEMENT

Table 8-1 provides actions and implementation schedules to address economic development and employment impacts of the Project.

Table 8-1 Economic Development and Employment – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Engage with primary contractor to identify potential barriers to local and Aboriginal employment	Minutes of meetings which identify barriers	Pre-construction / Once
Engage with primary contractor to set appropriate local and Aboriginal employment targets	Local and Aboriginal employment targets for construction	Pre-construction / Once
Develop a Local Employment Plan that facilitates inclusion of local and Aboriginal people and provides measures to reduce identified barriers	Internally approved Local Employment Plan	Pre-construction / Once
Work with existing Gove Indigenous Training Program to identify appropriate and fast-tracked training programs that can be delivered in advance of Project construction	Minutes of meetings which identify appropriate programs	Pre-construction / Once
Advertise job opportunities locally in accessible places and in appropriate languages and formats	Records of job advertisements	Project duration / Ongoing
Develop a Project website and relevant social media pages to advertise job opportunities	Fully functioning Project website with 'careers' page link	Pre-construction / Once
Include financial management education as part of induction programs to manage new income streams and cash flow in the community	Induction materials include 'financial management' component	All inductions / Ongoing
Engage with primary contractor to identify supply chain work packages that could potentially be targeted for delivery by local suppliers	Minutes of meetings with contractor which identify discrete work packages for local suppliers	Pre-construction / Once
Develop a Local Procurement Plan that identifies specific opportunities for local suppliers and provides measures to reduce identified barriers to participation	Internally approved Local Procurement Plan	Pre-construction / Once
Work with local businesses to facilitate the formation of Joint Ventures with more experienced providers	Notes of all consultations with local business	Pre-construction / Ongoing
Liaise with all relevant local Chambers of Commerce and Contractor Accredited Limited to provide early notification of potential contract opportunities	Minutes of meetings with Chamber of Commerce and Contractor Accredited Limited	Project duration / Ongoing
Advertise supply chain opportunities at locally accessible places (identify these in consultation with communities)	Records of supply chain advertisements at local venues	Project duration / Ongoing
Operation		
Engage with Human Resources team at the Gove refinery to identify long-term positions that may be able to be filled by local workers finishing construction of the pipeline	Minutes of meetings identifying long-term opportunities	During construction / Ongoing pre-operations

Action	Evidence Requirement and Data Source	Timing / Frequency
Identify appropriate candidates for participation in longer term opportunities	HR records of candidates pre-selected for training and employment	During construction / Once pre-operations
Provide necessary bridging / upskilling courses for identified candidates	Training records	Project duration / Ongoing
Decommissioning		
Develop a Closure Management Plan	Internally approved Closure Management Plan	Pre-construction / Once

8.2 Land and Country

8.2.1 Impact summary:

The Project will likely increase access to the Project area through increased road usage and development activity. Given local Aboriginal people's connection to their land, and responsibility to protect its environmental values, this increased access (by workers and other persons) may lead to community anxiety if land access protocols and negotiations are not properly adhered to. Construction activities for the Project may also impact on sacred sites and environmental features in local communities. These impacts are primarily short-term in nature, extending only across the construction phase of the Project, although access to land is likely to remain an issue throughout operations.

8.2.2 Management objective/s:

Avoid all unauthorised access to Aboriginal Land Trust Areas.

Minimise disturbance of sacred sites and significant areas.

Minimise impacts on environmental values through appropriate environmental management practices.

8.2.3 Management strategy:

8.2.3.1 MITIGATION

Table 8-2 provides actions and implementation schedules to address land access impacts of the Project.

Table 8-2 Land and Country – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Develop a Land Access Protocol in consultation with Traditional Owners and the NLC	Internally approved Land Access Protocol.	Pre-construction / Once
Ensure that all direct and contracted employees on the Project adhere to the Land Access Protocol	Zero reported breaches of the Land Access Protocol.	Project duration / Ongoing
Acquire an 'Authority Certificate' under S19B of the *Northern Territory Sacred Sites Act*	Approved Authority Certificate.	Pre-construction / Once
Ensure that the conditions and requirements of the sacred sites 'authority certificate' are adhered to by all direct and contracted employees	Zero reported incidents involving sacred sites / sites of significance	Project duration / Ongoing
Prepare and communicate detailed and visual information materials on the potential environmental impacts of construction	Community information sessions undertaken and recorded	During EIS / Once
Maintain Cultural Heritage controls for all Project activities that allow for protection of any heritage sites identified during the Project works that had not previously been identified.	Documented Cultural Heritage Management Plan. Cultural Heritage database generated from Project activities.	Pre-construction / Once Project duration / Ongoing
Develop a comprehensive Environmental Management Plan (EMP) for the Project	Government approved EMP	Pre-construction / Once
Adhere to the Australian Pipeline Industry Association (APIA) 'Code of Environmental Practice – Onshore Pipelines'	Environmental monitoring against APIA guidelines	Project duration / Ongoing
Develop 'environmental checklists' for all field activities to ensure that all relevant environmental factors are identified and considered	Internally approved 'environmental checklists'	Project duration / Ongoing
Operation		
Ensure that all direct and contracted employees on the Project adhere to the Land Access Protocol	Zero reported breaches of the Land Access Protocol	Project duration / Ongoing
Ensure that the conditions and requirements of the sacred sites 'authority certificate' are adhered to by all direct and contracted employees	Zero reported incidents involving sacred sites / sites of significance	Project duration / Ongoing
Develop a mechanism to involve community members in monitoring and reporting on the implementation of the EMP	Community involvement in environmental monitoring activities	Project duration / Ongoing
Decommissioning		
Develop a Closure Management Plan	Internally approved Closure Management Plan	Pre-construction / Once

8.3 Community Safety

8.3.1 Impact summary:

The Project is likely to result in an influx of non-resident workers into the local area and an increase in Project-related traffic, including heavy vehicles and machinery. Local stakeholders raised a number of community safety issues related to these changes. In particular, concerns around damage to local road surfaces, driver safety, increased substance abuse, spread of communicable disease, and risks around gas leaks and potential vandalism were expressed.

8.3.2 Management objective/s:

Minimise road safety risks to employees and local communities.

Minimise potential for the Project to exacerbate substance abuse issues in local communities.

Proactively educate communities about potential safety issues.

8.3.3 Management strategy:

8.3.3.1 MITIGATION

Table 8-3 provides actions and implementation schedules to address community safety impacts of the Project.

Table 8-3 Community Safety – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Provide bus transportation for all employees to and from construction camps to minimise use of private vehicles in the Project area	Bus transportation provider contracted	Pre-construction / Ongoing
Ensure that the most direct FIFO route is selected to minimise air and road travel for employees	Records of FIFO options analysis, and evidence of most direct route being selected	Pre-construction / Once
Develop a Traffic Management Plan for the Project	Internally approved Traffic Management Plan	Pre-construction / Once
Implement and monitor Traffic Management Plan	Monitoring reports	Project duration / Ongoing
Undertake community safety awareness sessions in local communities	Visual community safety information materials Records of awareness sessions	Project duration / Ongoing
Engage with NLC and Northern Territory Road Safety Branch to develop community safety awareness materials	Records of engagement with NLC and Northern Territory Road Safety Branch	Pre-construction / Once
Include strict substance management clauses (and disciplinary actions) in workforce Code of Conduct	Internally approved Code of Conduct	Pre-construction / Once
Ensure secure storage of potentially materials, and other equipment which may be at risk of vandalism	Security measures installed on site	Project duration / Ongoing
In consultation with the Northern Territory Department of Health, develop a comprehensive Health Management Plan to manage community and workforce health issues	Internally approved Health Management Plan Records of consultation with Department of Health	Pre-construction / Once
Implement and monitor Health Management Plan	Monitoring reports	Project duration / Ongoing
Develop and communicate an Emergency Management Plan for the Project	Internally approved Emergency Management Plan Evidence of communicating plan to communities	Pre-construction / Once
Implement and monitor Emergency Management Plan	Monitoring reports	Project duration / Ongoing
Operation		
Modify, implement and monitor Traffic Management Plan for Operations	Monitoring reports	
Modify, implement and monitor Health Management Plan for Operations	Monitoring reports	Ongoing
Modify, implement and monitor Emergency Management Plan for Operations	Monitoring reports	Ongoing

Action	Evidence Requirement and Data Source	Timing / Frequency
Continue to implement community safety awareness programs at regular intervals	Visual community safety information materials Records of awareness sessions	Ongoing
Decommissioning		
Develop a Closure Management Plan	Internally approved Closure Management Plan	Pre-construction / Once

8.4 Social Values and Community Cohesion

8.4.1 Impact summary:

The communities across the study area are generally small, remote Indigenous communities, with a strong connection to their land and community. The introduction of a FIFO workforce during construction for the Project may increase the level of community anxiety and conflict around access to employment opportunities and newcomers accessing traditional land. It is also perceived by local stakeholders that the construction workforce may exacerbate existing social issues including abuse of alcohol and other substances, while also potentially disrupting traditional leadership structures and processes.

8.4.2 Management objective/s:

Facilitate a self-contained accommodation arrangement to minimise negative interaction of workers with communities.

Manage workforce behaviour and interaction with local communities to minimise social ills.

8.4.3 Management strategy:

8.4.3.1 MINIMISATION

Table 8-4 provides actions and implementation schedules to address community cohesion impacts of the Project.

Table 8-4 Social Values and Community Cohesion – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Ensure that 'camp' accommodation is available for 100% of the non-local construction workforce for the Project	All workers are accommodated in Project-provided camp facilities	During construction / Ongoing
Ensure that FIFO flight routes follow the most direct available route, to prevent unnecessary 'stay overs' in regional communities	Records of consultation around identifying the most direct FIFO route	Pre-construction / Once
Provide basic facilities (e.g. shop, recreation and communication facilities) to avoid the requirement for workers to go into local towns	Each construction camp is equipped with appropriate facilities	During construction / Ongoing
Provide wet mess facilities at local camps subject to relevant approvals	A Liquor License is obtained for each construction camp	Pre-construction / Once
Develop a workforce Code of Conduct which manages worker behaviour inside and outside of working hours	Internally approved Code of Conduct	Pre-construction / Once
Ensure that all direct and contracted employees on the Project adhere to the Code of Conduct	Evidence of any breaches of the Code of Conduct and information on remedial action taken to prevent reoccurrence	Project duration / Ongoing
Include cultural awareness training in all employee induction training programs	All direct and contracted employees for the Project receive cultural awareness training	Project duration / Ongoing
Operation		
Ensure that all direct and contracted employees during Operations adhere to the Code of Conduct.	Evidence of any breaches of the Code of Conduct and information on remedial action taken to prevent reoccurrence.	Ongoing
Decommissioning		
Develop a Closure Management Plan	Internally approved Closure Management Plan	Pre-construction / Once

8.5 Infrastructure and Services

8.5.1 Impact summary:

Through the employment of a construction workforce, the Project has the potential to increase demand for some existing social infrastructure and services, particularly health, roads, housing and accommodation. Each of these service sectors has been identified by stakeholders as being currently constrained, and the potential exists that the Project will exacerbate existing issues.

8.5.2 Management objective/s:

Be self-sufficient in terms of workforce health management.

Provide construction workforce accommodation so as not to increase housing market demands.

Ensure the Project does not impact negatively on any existing infrastructure, such as roads.

8.5.3 Management strategy:

8.5.3.1 MITIGATION

Table 8-5 provides actions and implementation schedules to address infrastructure and service impacts of the Project.

Table 8-5 Infrastructure and Services – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Ensure that 'camp' accommodation is available for 100% of the non-local construction workforce for the Project	All workers are accommodated in Project-provided camp facilities	During construction / Ongoing
Develop a Health Management Plan with input from the Northern Territory Department of Health	Internally approved Health Management Plan Department of Health endorsement of Plan	Pre-construction / Once
Put in place emergency evacuation arrangements with relevant service providers	Signed agreement with evacuation providers	Pre-construction / Once
Primary contractors required to uphold/implement Health Management Plan and emergency evacuation arrangements	Contract incorporates requirement to implement Health Management Plan and emergency evacuation arrangements	Project duration / Ongoing
Develop and implement a Traffic Management Plan which includes actions designed to minimise impacts on road infrastructure	Internally approved Traffic Management Plan	Pre-construction / Once
Undertake an assessment of likely impacts to existing infrastructure and subsequent impacts on other industry	Assessment undertaken and resulting actions explained to interested stakeholders	Pre-construction / Once
Operation		
Health Management Plan and emergency management procedures revised in line with operations workforce profile	Internally approved revisions to Health Management Plan and emergency Management Procedures.	Pre-operations / Once
Decommissioning		
Develop a Closure Management Plan	Internally approved Closure Management Plan	Pre-construction / Once

8.6 Unplanned Closure

8.6.1 Impact summary:

The SIA for the Project assessed the risk to communities if the Project is forced to cease operations earlier than predicted, or if the construction of the pipeline is not completed as planned. In this instance, the lack of an alternative energy supply would have a knock-on effect for Pacific Aluminium's existing operations and result in the closure or 'mothballing' of the existing refinery at Gove. This would likely have a range of direct and indirect socio-economic impacts for local and regional communities. In particular, loss of job opportunities, local business and income opportunities, and changes to the local property market would be likely. Proactive management planning for this potential scenario is therefore required.

8.6.2 Management objective/s:

Minimise the socio-economic impacts of unforeseen Project closure / non-completion.

8.6.3 Management strategy:

8.6.3.1 MITIGATION

Table 3-6 provides actions and implementation schedules to address the impacts of unplanned closure.

Table 8-6 Unplanned Closure – Management and Monitoring Plan

Action	Evidence Requirement and Data Source	Timing / Frequency
Construction		
Develop an appropriate Closure Management Plan in consultation with relevant local and Northern Territory government agencies.	Internally approved Closure Management Plan	Pre-construction / Once
Develop and maintain a Social Risk Register which proactively identifies the social risks of closure	Up-to-date Social Risk Register maintained on site	Project duration / Ongoing
Operation		
Update of the Closure Management Plan and Social Risk Register to incorporate operations-specific objectives and strategies.	Updated Closure Management Plan Updated Social Risk Register	Project duration / Ongoing
Decommissioning		
Implementation of the Closure Management Plan	Monitoring and reporting on implementation of the Closure Management Plan	During decommissioning / Once

9 STAKEHOLDER ENGAGEMENT

Effective stakeholder engagement will be crucial to managing stakeholder aspirations and expectations for the Project. This is important in ensuring that stakeholders have a realistic understanding of the opportunities and impacts likely to occur as a result of the Project, thus reducing the likelihood of tensions between communities, other stakeholders and the Project.

9.1 Community and Stakeholder Engagement Plan

A Community and Stakeholder Engagement Plan (CSEP) has been developed for the Project. The CSEP will be implemented in line with Pacific Aluminium's *Community and Stakeholder Engagement Plan Guidance (*September 2012). As outlined in the Guidance document, CSEP will outline the intended approach to:

- Meeting regulatory requirements (including those commitments made in this SIMP).
- Mitigating negative business impacts on communities.
- Providing agreed benefits to communities.

This CSEP will be a life-of-Project strategy that is reviewed and updated annually with specific objectives, actions and targets to be met during that year.

The SIA process revealed a number of issues which can best be mitigated or minimised through targeted stakeholder engagement. These SIA findings will be fed into the community and stakeholder engagement planning process and the final CSEP. In some cases, actions to be completed under the auspice of the CSEP will be direct mitigation or management actions as outlined in the SIMP Management and Monitoring Plans.

In particular, stakeholder perceptions of likely Project impacts or opportunities, whether real or perceived, will be addressed through targeted engagement. A summary of issues identified through the SIA that can be addressed through targeted engagement, and the relevant SIMP Management and Monitoring Plan is provided at Table 9-1:

Table 9-1 Stakeholder Perceptions and Relevant Monitoring and Management Plan

Perceived Impact or Opportunity	Relevant SIMP Management and Monitoring Plan
Expectations that local participation in the Project, either through direct employment or business ventures, will be guaranteed.	Economic Development and Employment
Aspirations and expectations for involvement will likely be particularly high amongst communities along the pipeline route, while existing capacity may be low.	Economic Development and Employment
Perception that the Project will result in significant impacts on existing services and infrastructure, despite short construction timeframe and small operations workforce.	Infrastructure and Services
Perception that the Project will impact significantly on social cohesions and cultural values within communities along the pipeline route.	Social Values and Community Cohesion

Other key findings from the SIA consultation process include the need to ensure Project information is provided in the relevant language and via communication mechanisms tailored to the audience. Recommendations included utilising visual displays, particularly in relation to what construction activities will look like and what the pipeline area will look like once construction is complete. Hands-on demonstrations were also requested, such as having an environmental professional meet with communities and explain what environmental monitoring will be undertaken and the equipment that will be used. These recommendations will all be considered in the development of the CSEP.

9.2 Community Observations and Feedback Management

The Project is committed to meeting its community and stakeholder responsibilities and recognises that a clear grievance process is an important tool to assess the Project's overall social performance as well as understand perceptions and concerns around day-to-day activities.

Pacific Aluminium's existing *Community Observation and Feedback Management Procedure* (March 2012) will be applied to the pipeline and will be outlined in the CSEP. All Project and contractor staff will be required to adhere to the procedure to ensure the timely capture of any community observation, requests and concerns, and ensure that feedback is provided.

The *Community Observation and Feedback Management Procedure* outlines responsibilities for lodging, investigating and responding to any community observations, and the timeframes within which feedback must be given. Procedures for responding to emerging and potentially serious issues are also outlined.

All stakeholder and community interaction will be lodged in a consultation database. This database will be used to monitor stakeholder sentiment and any emerging issues. Engagement outcomes will also be recorded and reported and evaluated as part of the annual review of the CSEP.

10 MONITORING AND REPORTING

10.1 Monitoring

The monitoring and evaluation of social management measures is important to understand how individual programs are tracking against overall Project objectives. This allows the Project team to respond to both internal Project changes and external community feedback.

In particular, robust monitoring and evaluation of activities will allow the Project to:

- Identify and respond to problems at an early stage.
- Conduct more effective forward planning.
- Record program inputs, outputs, outcomes and impacts.
- Understand and justify whether a program is meeting initial objectives.
- Increase accountability within Project staff and teams.
- Understand if community and stakeholder expectations are being met.
- Increase levels of Project transparency.

Detailed monitoring plans have been outlined in each action plan, as described above. These plans provide a framework for performance targets, data sources, data collection mechanisms and frequency of data collection.

The key monitoring mechanisms that are proposed in these action plans are summarised in Table 10-1.

Table 10-1 Summary of Key Monitoring Mechanisms

Monitoring Mechanism	Data Type	Purpose
Employment records	Quantitative	Monitor employment diversity, e.g. gender, Indigenous status, local residency.
Procurement spend reports	Quantitative	Monitor Project spend on goods and services with local and regional providers, as well as with Indigenous businesses.
Project safety reporting	Quantitative	Monitor safety incidents and near misses that may impact on workforce health and wellbeing, as well as on the general community.
Government statistics	Quantitative	Monitor changes in crime rates, hospital admissions, road safety incidents, school enrolments, emergency responses, rental vacancies and house prices.
Attendance records	Quantitative	Reflect workforce and community participation in education programs, business forums, induction training, safety sessions, etc.
Environmental monitoring reports	Quantitative	Report on results of dust, noise and air quality monitoring to evaluate potential impacts on amenity.
Community Observations, Complaints, Disputes and Grievance Register	Qualitative	Record community issues, concerns and questions regarding the Project – to identify evolving social issues.

10.2 Reporting

Communicating the findings of the monitoring process is important in providing key stakeholders with information on how social management activities are progressing. Internally, for Pacific Aluminium, it shows how Project funds are being used to achieve key objectives. Additionally, the findings generate knowledge of what works, what does not work and why; helping the Project team to appropriately manage impacts throughout the Project life.

Internal reporting on actions contained in this SIMP for the KGGP Project will also be undertaken.

External reporting during construction and operation will take place through the Project site's annual sustainability reporting mechanism. This report will provide a clear link between business and community objectives, and will be updated annually.

Throughout the EIS process, regular community reporting will also be continued through Project newsletters and presentations to local forums such as Chamber of Commerce meetings in relevant communities and community meetings along the pipeline corridor.

11 DEFINITIONS

SOCIAL IMPACT (RISK) RATING FRAMEWORK

Nature

Positive:	Impacts have a positive or uplifting effect on the project-affected community and stakeholders. The quality of life of affected individuals, households or communities is improved.
Negative:	Impacts have a negative or adverse effect on the project-affected community and stakeholders. The quality of life of affected individuals, households or communities is diminished.
Neutral:	Impacts are neither positive nor negative in nature and have no meaningful effect on project-affected communities and stakeholders.

Extent

6	International
5	National (within defined national boundaries)
4	State (within defined state boundaries)
3	Regional (within regional council boundaries, or 100 km of pipeline corridor)
2	Local communities (within 20 km of pipeline corridor)
1	Site-specific (within 200 m of pipeline corridor)

Duration

4	Permanent / irreversible (more than 50 years)
3	Long term (2 – 50 years duration)
2	Medium term (6 months – 2 years duration)
1	Short term (1 – 6 months duration)

Severity

4	**Very High** Irreparable damage to/destruction of highly valued items of great cultural significance, irreversible reputation damage or a complete breakdown of social order. Affects a large proportion of society.
	Enduring positive impact on social, economic and cultural environment for a large number of people.
3	**High** Serious social issues/temporary cease of systems functioning or wide-reaching community dissent.
	Significant improvement to social, economic or cultural environment or quality of life for a large number of affected people.

2	**Medium** Moderate social issues and/or moderately significant damage to items of cultural significance. Social environment altered but systems continue to function. Localised community impact but may require long term management.
	Moderate improvement to social, economic or cultural environment or quality of life for affected people.
1	**Low** Minor changes to the social environment, which are easily reversible over time; Localised impact among a small group of impacted stakeholders.
	Minor improvement to quality of life and/or social functioning for a small number of individuals or groups.
0	**Negligible** No discernible impacts on the local population, repairable over time. Temporary impairment of the availability of items of cultural significance. Affects only very few people.
	No discernible improvement to quality of life and/or the social, economic or cultural environment. Affects only very few people.

Probability

4	Almost certain (>90% chance)
3	Probable (51% - 90% chance)
2	Possible (11% – 50% chance)
1	Unlikely (<10% chance)
0	Impossible

CONSEQUENCE FORMULA

Consequence = **Extent + Duration + Severity**

Significance = **Consequence x Probability**

*Produces score / 60

**Normalised to a percentage score / 100

Significance Score	Negative	Positive
< 25 **LOW**	An acceptable impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. Results in short-term effect on the social and/or cultural environment.	Minor positive changes for a small group of people. Impacts result in a short-term benefit or improvement to the social and/or cultural context. Benefits can be enhanced through the application of management strategies.
25 – 50 **MEDIUM**	An important impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but in conjunction with other impacts may prevent its implementation. Results in a negative medium to long-term effect on the social and/or cultural environment.	A benefit or improvement of medium significance, which can be enhanced through the application of management measures. In combination with other project benefits, the impact has the potential to leverage community support. Results in a positive medium to long-term effect on the social and/or cultural environment.
51 – 75 **HIGH**	A serious impact, if not mitigated, may prevent the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term change to the social environment and result in severe effects.	A substantial benefit or improvement to the social or cultural environment, or quality of life of a large group of people. The benefit can be enhanced to include a broader group of people, and would be considered by the community as a good and long-term advantage for beneficiaries.
> 75 **VERY HIGH**	A very serious impact which may be sufficient by itself to prevent implementation of the project. The impact may result in permanent change. Very often these impacts are irreversible and usually result in very severe effects for a large group of people.	A wide-reaching, permanent and extremely significant benefit for whole communities. It would be difficult to enhance the benefit further, and the opportunity is likely to be sustained over future generations.

Appendix 2 Impact Assessment Rating Methodology

IMPACT SUMMARY			IMPACT SIGNIFICANCE BEFORE MITIGATION								IMPACT SIGNIFICANCE AFTER MITIGATION							
Social Impact	Affected Stakeholders	Project Phase	Nature (P / N)	Extent	Duration	Severity	Consequence	Probability	Significance / 56	Significance / 100	Nature (P / N)	Extent	Duration	Severity	Consequence	Probability	Significance / 56	Significance / 100
ECONOMIC DEVLEOPMENT AND EMPLOYMENT																		
Sustaining the economic and employment benefits of the refinery at Gove	Refinery workforce Local communities Local business community Local and State government	Const & Ops	P	4	3	4	11	4	44	79	P	4	3	4	11	4	44	79
Direct employment opportunities for local communities	Local communities	Construction	P	3	2	1	6	4	24	43	P	3	2	2	7	4	28	50
Direct training and development opportunities for local communities	Local communities	Construction	P	3	1	1	5	2	10	18	P	3	1	2	6	3	18	32
Procurement and contracting opportunities for local businesses	Local business community	Const & Ops	P	3	2	1	6	2	12	21	P	3	2	2	7	3	21	38
LAND AND COUNTRY																		
Increased access of traditional lands by workers and other non-local people without necessary permits	Traditional Owners	Const & Ops	N	2	2	3	7	3	21	38	N	2	2	3	7	1	7	13
Potential for sacred sites and significant areas to be disturbed or damaged due to increased access	Traditional Owners Local communities	Construction	N	1	2	3	6	2	12	21	N	1	2	3	6	1	6	11
Potential for negative environmental impacts on features of value to communities, e.g. waterfalls, springs, billabongs and river crossing and catchment areas	Traditional Owners Local communities	Construction	N	2	2	3	7	2	14	25	N	2	2	3	7	1	7	13
COMMUNITY SAFETY																		
Heightened road safety risk due to increased movement of traffic and machinery through the Project area	Project workforce Local communities	Const & Ops	N	2	3	2	7	3	21	38	N	2	3	2	7	2	14	25
Potential risk of gas leaks and explosions	Project workforce Local communities	Const & Ops	N	2	3	3	8	2	16	29	N	2	3	3	8	1	8	14
Theft and vandalism of Project infrastructure and equipment	Project owners	Const & Ops	N	1	3	2	6	2	12	21	N	1	3	2	6	1	6	11
Increased incidence of communicable disease due to population influx	Project workforce Local communities	Construction	N	2	2	2	6	2	12	21	N	2	2	1	5	1	5	9
SOCIAL VALUES AND COMMUNITY COHESION																		
Continued viability and vitality of Nhulunbuy community through sustained operation of the refinery	Local communities	Const & Ops	P	3	3	3	9	4	36	64	P	3	3	3	9	4	36	64
Increase in community conflict and anxiety related to use of traditional lands and introduction of non-local workforce	Project workforce Local communities	Construction	N	2	2	2	6	3	18	30	N	2	2	1	5	2	10	18
Increase in the occurrence of social ills (e.g. alcohol and substance abuse) through the introduction of non-resident workers	Project workforce Local communities	Construction	N	3	2	3	8	3	24	40	N	3	2	3	8	1	8	14
INFRASTRUCTURE AND SERVICES																		
Decreased housing and accommodation affordability and availability in local communities	Project workforce Local communities	Construction	N	2	2	3	7	2	14	25	N	2	2	2	6	1	6	11
Increased pressure on local health and emergency services due to increased non-resident population	Health service providers Local communities	Construction	N	3	2	3	8	3	24	43	N	3	2	2	7	1	7	13
Potential impacts on the functioning of other industry infrastructure through Project placement and increased demand for services	Local industries	Construction	N	1	2	2	5	2	10	18	N	1	2	2	5	1	5	9
UNPLANNED CLOSURE																		
Unforeseen closure event or non-completion of the pipeline project	Project workforce Local communities Government agencies	Decommissioning	N	4	4	4	12	3	36	64	N	4	3	2	9	2	18	32