



# **GRANTS LITHIUM PROJECT**

## **Environmental Impact Statement**

### **Appendix L**

## **Social Impact Assessment**

Prepared by True North Strategic Communications  
October 2018

# Core Exploration Ltd Grants Lithium Project

## **SOCIAL IMPACT ASSESSMENT**

Prepared by True North Strategic Communication

OCTOBER 2018

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## LIMITATIONS

This Social Impact Assessment is based on desktop research, the findings of a risk assessment, client input, background documents, community and stakeholder consultation and dedicated social impact assessment interviews.

Most organisations contacted were cooperative and data was available, however one key stakeholder proved difficult to contact and the authors were unable to conduct an assessment interview with that stakeholder. One identified impact in this document has therefore not been assessed as the information required to make an assessment was not available.

While True North Strategic Communication has applied its best efforts to produce a reliable and accurate study based on ethical research methodology, some of the limitations of this Social Impact Assessment include:

- the subjective and variable nature of many social impacts, which makes it difficult to assess and predict the level of risks and opportunities with accuracy
- using professional judgement to determine the appropriate level of time and resources, given an initial assessment of likely risk
- difficulties accessing up-to-date and relevant data on some issues, or lack of data for the local areas
- difficulties getting direct feedback from some impacted stakeholders, due to availability at the time of interviews
- the limited experience of some stakeholders with the environmental approvals process and social impact assessment.

The consultants have applied their best professional judgement to focus on likely key issues and generate sound analysis and prediction of likely beneficial and detrimental social impacts at different stages of the project. However, ongoing engagement by the proponent is recommended to capture any emerging issues and provide continued input to decision-making by those stakeholders impacted by the project. This is covered in the project's Social Impact Management Plan.

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## ACRONYMS AND ABBREVIATIONS

|       |                                                           |
|-------|-----------------------------------------------------------|
| AAPA  | Aboriginal Areas Protection Authority                     |
| ABS   | Australian Bureau of Statistics                           |
| AFANT | Amateur Fishermen's Association of the Northern Territory |
| DMS   | Dense Media Separation                                    |
| DSO   | Direct Shipping Ore                                       |
| DTC   | Department of Tourism and Culture                         |
| EIS   | Environmental Impact Statement                            |
| FIFO  | Fly-in-Fly-Out                                            |
| FPIC  | Free Prior and Informed Consent                           |
| GDP   | Gross Domestic Product                                    |
| GSP   | Gross State Product                                       |
| IAIA  | International Association for Impact Assessment           |
| IAP2  | International Association for Public Participation        |
| LGA   | Local Government Area (ABS statistical area)              |
| Li2O  | Lithium Oxide                                             |
| ML    | Mining Lease                                              |
| NLC   | Northern Land Council                                     |
| NTCA  | Northern Territory Cattlemen's Association                |
| NTEPA | Environment Protection Authority (NT)                     |
| PFS   | Pre-Feasibility Study                                     |
| ROM   | Run of Mine                                               |
| SA3   | Statistical Area 3 (ABS statistical areas)                |
| SA4   | Statistical Area 4 (ABS statistical areas)                |
| SEIFA | Socio-economic Indexes for Areas                          |
| SIA   | Social Impact Assessment                                  |
| SIMP  | Social Impact Management Plan                             |

## 1. Executive summary

Core Exploration is proposing to develop a lithium mine at the Grants Lithium Project (the project), located on the Cox Peninsula – 36 kilometres by road from the township of Berry Springs and 20 kilometres (as the crow flies) from Darwin in the Northern Territory, Australia.

The Grants resource contains approximately 1.8 million tonnes of high grade spodumene, a mineral that contains lithium, and is one of the highest grade undeveloped lithium deposits in Australia. The mineral will be extracted from an open pit that will be established on site. Processing of the mined material will take place on site using Dense Media Separation (DMS) to create a concentrate product for export. There will be no chemicals used in this processing, only water, which will be sourced from Observation Hill Dam, which is located about five kilometres south of the project area. The concentrate will then be trucked to Darwin Port for export to Asian markets.

The project site is located on Cox Peninsula Road on vacant Crown land. The land surrounding the site is undeveloped vacant Crown land and bushland. The Cox Peninsula area is recognised as Larrakia country with a large section of the peninsula part of the successful Kenbi Land Claim, however this does not include the project site. The area has a history of mining activity, however development in the area has been limited. The project is expected to be operational for up to three years, creating 100 to 150 direct jobs.

This Social Impact Assessment (SIA) was prepared after baseline research and recent consultation between May and September 2018 and draws on earlier consultation that took place in October 2017. The SIA covers construction of the mine and supporting infrastructure, extraction and processing of the mineral, transportation of the concentrate to Darwin Port, and closure and rehabilitation of the mine.

The Grants project is assessed as being of a smaller scale than many other regional resource projects as it will have a small workforce, is operating in an area that has been mined in the past and has an expected operational life of three years. It also does not intend to use a fly-in-fly-out (FIFO) workforce, and will instead draw the majority of its workforce from the local area.

The key opportunities identified from the project are the opportunities for direct and indirect jobs including Indigenous employment and local contracts, and the flow-on effects of these. This includes a boost to the local economy through payments to workers, contractors and local companies and local procurement of goods and services. Sponsorship is also identified as a key opportunity for impacted communities, particularly in and around Berry Springs.

Key negative impacts identified include increased road safety risk due to project traffic, particularly in built-up areas and specifically around the Berry Springs Primary School, and traffic delays or congestion due to additional industrial and workforce traffic and blasting activity.

This assessment finds a total of **five opportunities** and **16 potentially negative impacts**, although all except two of the negative impacts have a LOW rating.

The five positive impacts are all rated as MODERATE, meaning they are expected to have a MODERATE positive impact after enhancement. These are:

- local communities benefit through distribution of sponsorship funds
- local businesses benefit from winning contracts
- local economies stimulated through payments to workers, contractors and local companies
- boost to direct and indirect local employment, through jobs on the project or throughout the local supply chain
- Indigenous employment opportunities.

Of the negative potential impacts, there were none with an overall EXTREME or HIGH rating, two had a MODERATE rating, 13 were assessed as LOW and one was not assigned a rating.

The two MODERATE impact ratings were:

- increased road safety risk due to project traffic, particularly in built-up areas
- traffic delays or congestion from additional industrial, workforce vehicles and blasting.

Risk (#12) (reduced access to and enjoyment of traditional cultural activities) was not assigned a rating due to the key stakeholders being unavailable during consultation. The authors were not able to determine the current traditional activities undertaken in the area and could therefore not comment on the degree to which the project will reduce access for these activities. However future engagement by Core with these stakeholders (Belyuen community) is currently in planning.

## 2. Background

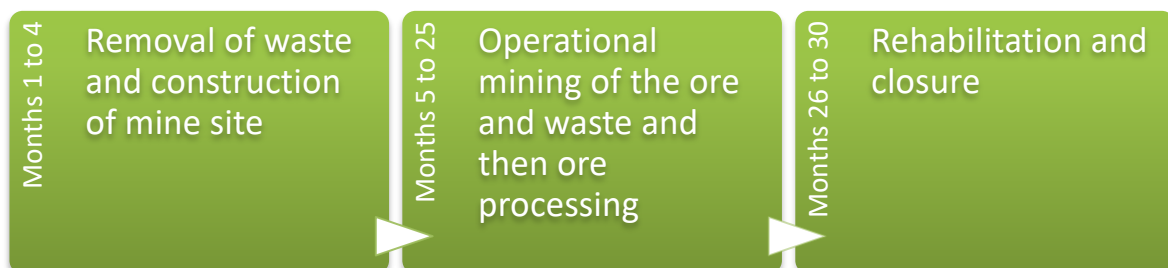
Core's Grants Lithium Project (the project) occurs within Mining Lease ML (A) 31726, which covers 750 hectares. Project development and operation will disturb 117 hectares within the mining lease. The project area is located entirely on vacant Crown land that has a history of mining exploration and production over the past 100 years. Previous activities have included mining for tin and tantalum and exploration drilling. There are several historic sites in the surrounding area, the closest sites are located 1.5 kilometres west and south west of the project. There are no registered heritage sites on the mining lease.

The Grants resource contains approximately 1.8 million tonnes of minable spodumene ore and is one of the highest grade undeveloped lithium deposits in Australia. Spodumene is a granite-like rock that contains lithium oxide (Li<sub>2</sub>O). A Pre-Feasibility Study (PFS) was completed and identified an operational mine life of 26 months for processing 1.8 million tonnes of Direct Shipping Ore (DSO) at 1.48 per cent Li<sub>2</sub>O. Core elected to use Dense Media Separation (DMS) processing of ore to produce a higher value concentrate of between five and six per cent Li<sub>2</sub>O. This has a twofold benefit of enhancing the value of the shipped product and reducing the volume of product for transport. However, it is likely that the project will still include some mining and export of DSO product.

The project would include a drill and blast open pit, a Run of Mine (ROM) Pad, processing facilities, surface water dams and storage facilities and a combined waste rock dump and tailings storage facility. Approximately 211,000 billion cubic metres of topsoil will be removed and stockpiled for

rehabilitation. Conventional excavation, drill and blast mining methods will be used. Cox Peninsula Road will be closed three times per week for up to 15 minutes during the blasting. It should be noted that during consultation, stakeholders and the community were advised that blasting may occur daily. Core revised its proposed blasting schedule to three times per week after the SIA consultation period had closed. All materials (ore and waste) will require blasting and once blasted will be removed from the pit by excavators. Two excavators will remove the waste and dump trucks will transport it to the waste rock dump. A single excavator will remove the ore and dump trucks will transport it to the ROM Pad for crushing and screening. The pit will be approximately 450 metres wide, approximately 550 metres long and approximately 200 metres deep. Groundwater assessments on the site have indicated that the pit will intersect groundwater, which, along with rainwater, will be pumped from the pit and used in processing and dust suppression.

Most of the ore will be processed by DMS, which involves taking crushed ore and using water and dense media to separate the material into a 'sink' and 'float' stream based on the natural density of the spodumene being processed. The 'sinks' are the final concentrate product to be transported to port for export and the 'floats' are sent to a reject stockpile. There are no chemicals used in DMS processing. Tailings, which is the fine material less than 0.5mm in size screened from the crushed ore before it is fed into the DMS plant, would be stored within three compartmentalised tailings storage facilities created within the waste rock dump. The volume of tailings from the project is expected to be 275,000 cubic metres.



#### Stages of the mining process

Stormwater control will be managed through the construction of a flood diversion bund and an erosion and sediment control plan will be developed by a certified practitioner. The project will source its water from an existing man-made dam called Observation Hill Dam, which has an estimated capacity of more than 400,000 kilolitres. The project will need to develop a supplementary water source to meet its water requirements. Preliminary investigations have established that feasible water sources are available within the immediate project area, such as nearby tributaries.

The capital cost of the project is A\$53.5 million with operating costs of A\$371.72 per tonne of concentrate. Following regulatory approvals, Core aims to be operational in the second half of 2019 with the first ore mined in October 2019 and the first product exported from Darwin Port in December 2019.



### ***Logistics***

The project has substantial infrastructure advantages, and is less than one hours' drive from skills, trades, workshops and services in Palmerston and Darwin. The project is located approximately 20 kilometres south of Darwin (as the crow flies), 500 metres off Cox Peninsula Road. It is approximately 36 kilometres to the west of the community of Berry Springs. A key logistical benefit of the project is that it is located within 25 kilometres of the Darwin Port – the closest Australian port to China.

A concentrate product of between five and six per cent lithium oxide would be transported by road to Darwin Port for export to China, and Core has established a Heads of Agreement with Darwin Port to export product from East Arm Wharf. DMS processing compared with DSO production means a fourfold reduction in the volume of materials to be trucked to Darwin Port. A Heavy Vehicle Route Assessment conducted by Flanagan Consulting Group in 2017 identified a preferred route to transport the product from site to port. The route is along Cox Peninsula Road to the Stuart Highway, then along the Stuart Highway to Tiger Brennan Drive and onto Berrimah Road to Darwin Port. The total travel distance for this route is 88.31 kilometres. A multi-criteria assessment was applied and this route has the least impact on stakeholders as identified in earlier stakeholder engagement. There is an expected heavy vehicle movement of up to ten trucks per day (return) during operation for a concentrate product.

### ***Further Exploration***

There is the potential for growth through the exploration of nearby minerals resources, particularly BP33. BP33 has the potential to add 70 per cent to the resource base of the project and would be a much larger ore body and project than the Grants project. The proposed capital expenditure and infrastructure associated with the Grants project could help to make BP33 feasible. However, the BP33 prospect is not sufficiently defined in Joint Ore Reserve Committee (JORC) terms to be included as a project at this time. Core is continuing to conduct exploration drilling and investigations into BP33 and other prospects in the area with the goal to increase its JORC resources.

### ***Lithium***

The global boom in lithium battery storage is expected to continue. The growth in lithium-ion batteries is driven by demand for electric vehicles and energy storage. Lithium raw materials are the vital ingredient for lithium ion battery technology.

Core has signed a Binding Offtake and Prepayment Agreement with Yahua International Investment and Development Co (Yahua), for the supply of one million dry metric tonnes of DSO or DMS concentrate equivalent. This will account for approximately one third of the Grants project product sales over the life of the mine.

## 2.1 Purpose of a Social Impact Assessment

The purpose of a Social Impact Assessment (SIA) is to:

- a) describe the communities and current socio-economic environment in the project's area of influence
- b) understand the likely change processes triggered by the project
- c) analyse and predict the consequent positive and negative impacts, both direct and indirect, intended and unintended
- d) outline how negative impacts will be avoided, mitigated or managed and how beneficial impacts, such as employment and economic opportunities, will be enhanced.

Analysis is based on both qualitative and quantitative baseline data gleaned from sources such as the Australian Bureau of Statistics (ABS) and literature that provides insights into the area's history, its peoples, their lifestyles, values and perceptions, land use, key economic sectors and potential cumulative impacts from other projects.

Initial desk research informed the initial scoping for the study including key people, communities and land uses and likely key issues from the community's perspective.

A communication strategy was prepared to guide the provision of timely, relevant and appropriate information to stakeholders prior to seeking feedback.

The purpose of the consultation was to gain insights into how people are likely to experience change from the project, their fears and aspirations, expectations and local knowledge.

The style of consultation was adapted to the needs of various stakeholders, prioritising those most likely to be impacted by the project.

The SIA, Social Impact Management Plan (SIMP), associated risk analysis and consultation reports should give confidence that Core understands key issues from the community's perspective and has incorporated these findings in a SIMP.

## 2.2 Objectives

The objectives of this social impact assessment are to:

- describe the current socio-economic environment in the project's area of influence
- outline likely change processes from project activities
- analyse and predict positive and negative impacts on people's lives, livelihoods and lifestyles arising from these interventions
- assess the significance of these impacts as experienced by stakeholders and their likely extent and duration before and after mitigation or enhancement
- incorporate good community consultation practice to capture qualitative insights
- produce concise and relevant reports that give regulators confidence that Core has a comprehensive understanding of the social environment in which it will be operating

- produce a SIMP that outlines company commitments and measures to alleviate or manage potentially negative impacts, enhance beneficial impacts – such as opportunities for jobs and economic development – during various project stages, and capture and respond to emerging issues throughout the life of the project.

#### Social Impact Assessment

- A Social Impact Assessment includes the process of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs plans, projects) and any change processes invoked by those interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment (International Association for Impact Assessment, 2003).

Figure 1: IAIA definition of social impact assessment

### 2.3 Scope

The scope of this study covers the communities and people most likely to experience change and positive and negative social impacts from the project. These impacts will be experienced in different ways, depending on context such as where people live, how they experience impacts, their resilience to change, the stage of the project and situational factors such as cumulative impacts from other projects.

The scope of the study is:

- **temporal:** covering all stages of the project, including, planning, construction, operations, closure and rehabilitation
- **spatial (area of influence):** the key areas that may be directly or indirectly impacted and the people, communities, institutions and social structures close to the project area or access routes:
  - the closest towns/cities or communities, such as Berry Springs, Tumbling Waters, Belyuen, the surrounding rural areas such as Coolalinga, Freds Pass, Bees Creek, McMinns Lagoon, and Darwin and Palmerston. These areas may be impacted by project infrastructure, logistics, supply chains, recruitment, services and supplies
  - the broader Northern Territory, mainly in relation to industry and economic benefits
- **people:** people, families and communities in the project's area of influence who may have a connection to the land or who may experience impacts
- **economic:** direct and indirect economic benefits for the communities and towns close to the project area, the Darwin region, the Northern Territory and Australia.

**Note:** In terms of geographic boundaries, the region under study is just outside the Litchfield Council Local Government Area, but within the ABS defined Unincorporated NT area. As the Unincorporated NT area covers vast distances dispersed across various areas in the Northern Territory, statistics from the ABS Litchfield Council Local Government Area (LGA) are used here for demographic data. Some of the data also draws on statistics from individual community profiles in the affected area and as Darwin

and Palmerston are likely to be a source of employment, goods and services, relevant statistical data from Darwin and Palmerston that fall under ABS statistical area Darwin (SA4) are also used.

### *Requirements of the Terms of Reference*

The Northern Territory Environment Protection Authority (NTEPA) Draft Terms of Reference states that the proponent should provide a balanced summary of the social and economic values and potential impacts (positive and negative) of the proposal on a regional, state and national scale, including:

- a summary of the economic feasibility of the Proposal
- estimated capital and annual operational expenditure and estimated total revenue for the duration of the Proposal (to provide the economic scale of the proposal)
- estimated overall tax and estimated total contribution to Gross State Product and Gross Domestic Product over the economic life of the Proposal
- opportunities available to regional centres based on the activity generated by the Proposal (construction, operation and rehabilitation)
- estimated workforce and contractor numbers by occupational classification and overall employment training proposed during construction, operation and rehabilitation
- planned Aboriginal employment, training, participation and other potential benefits
- availability of goods and services and other contributions to local communities.

## **2.4 Standards**

The following key industry standards have guided this study and community consultation:

- International Association for Impact Assessment (IAIA), *Social Impact Assessment Principles* (Vanclay, 2003)
- IAIA's *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay et al., 2015)
- International Association for Public Participation (IAP2) *Core Values, Spectrum of Participation and Quality Assurance Standard* (2015) that are the industry standard for effective public participation (or community and stakeholder engagement) (see [www.iap2.org.au](http://www.iap2.org.au))
- *Guidelines for the Preparation of an Economic and Social Impact Assessment*, Northern Territory Environment Protection Authority, November 2013
- *AS/NZS ISO 31000:2018 Risk Management – Principles and Guidelines*.

The concept of free, prior and informed consent FPIC is considered particularly important for vulnerable and disadvantaged communities, recognising an unequal power relationship:

- **free:** no coercion, harassment or retribution
- **prior:** before any activity starts
- **informed:** full disclosure
- **consent:** that communities have a real choice (Vanclay et al. 2015).

## 3. Methodology

### 3.1 Methodology

Scoping for the project was based on an initial desktop study to identify key issues likely to be relevant to this Social Impact Assessment. The scoping was also informed by stakeholder engagement conducted by True North Strategic Communication in October 2017 before lodgement of the Notice of Intent.

This was followed by an impact assessment exercise to assess the consequence and likelihood of potential risks to the community against certain criteria. Likelihood scores were rated as rare, unlikely, possible, likely or almost certain, while consequence was rated by the extent of the impact, duration of the event, sensitivity of the community to change, severity of change and the level of community concern.

#### Likelihood descriptors used to assess social impacts

- A Almost certain
- B Likely
- C Possible
- D Unlikely
- E Rare

#### Consequence descriptors used to assess social impacts

| Descriptor         | Example                                                                                                    | Potential range of consequences, including:<br><i>Risk – potential negative impact</i><br><i>Opportunity – potential positive impact</i>                                                          |
|--------------------|------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Extent</b>      | The geographic footprint of the impact.                                                                    | 1 = Localised – small impact footprint<br><br>5 = Extensive – negative or positive impact will be felt well outside the project footprint by many people or communities or downstream communities |
| <b>Duration</b>    | Is the impact <b>temporary or permanent?</b>                                                               | 1 = Short-term threat or benefit<br><br>5 = Permanent or long-term – for the life of the project or beyond                                                                                        |
| <b>Severity</b>    | The <b>degree of change</b> from existing conditions.                                                      | 1 = Imperceptible change from existing conditions<br><br>5 = A substantial and noticeable change to existing conditions, lifestyles (positive or negative)                                        |
| <b>Sensitivity</b> | How <b>sensitive</b> is the community to this change? What is their resilience or vulnerability to change? | 1 = Few people will feel, perceive or be concerned, or excited about the changes, which can be readily absorbed                                                                                   |

|                          |                                                                     |                                                                                                                                                                                                                          |
|--------------------------|---------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                          |                                                                     | 5 = People will feel or perceive major disruption or opportunities to lives, lifestyles, values and may have trouble accommodating this.                                                                                 |
| <b>Community concern</b> | What does a community <b>think</b> or <b>feel</b> about this issue? | <p>1 = The issue does not cause concern or raise expectations.</p> <p>5 = There is widespread fear, concern, alarm or excitement that is likely to attract complaints, media coverage, protests, political pressure.</p> |
| <b>Consequence score</b> |                                                                     | <p>1. Minimal (consequence score of 1-5)</p> <p>2. Minor (score of 6-10)</p> <p>3. Moderate (score of 11-15)</p> <p>4. Major (score of 15-20)</p> <p>5. Extreme (score of 21-25)</p>                                     |

### Social risk and opportunities ratings

|                    |   |                | Consequence level |          |          |         |         |
|--------------------|---|----------------|-------------------|----------|----------|---------|---------|
|                    |   |                | 1                 | 2        | 3        | 4       | 5       |
|                    |   |                | Minimal           | Minor    | Moderate | Major   | Extreme |
| Likelihood         | A | Almost certain | A1                | A2       | A3       | A4      | A5      |
|                    | B | Likely         | B1                | B2       | B3       | B4      | B5      |
|                    | C | Possible       | C1                | C2       | C3       | C4      | C5      |
|                    | D | Unlikely       | D1                | D2       | D3       | D4      | D5      |
|                    | E | Rare           | E1                | E2       | E3       | E4      | E5      |
| Social risk rating |   |                |                   |          |          |         |         |
|                    |   |                | Low               | Moderate | High     | Extreme |         |

Figure 2: Social risk and opportunities matrix, based on Vanclay, et al. risk assessment framework (2015:49)

Risk assessment considers risk as events that might ‘create, enhance, prevent, degrade, accelerate or delay the achievement of objective’ or ‘the effect of uncertainty on objectives’ of projects (AS/NSZ guidelines) whereas impact assessment considers how impacts are felt, experienced or perceived by people and communities.

The grouping of impacts for this assessment was based on International Association for Impact Assessment (IAIA), *Principles for Social Impact Assessment* (Vanclay 2003) and *Social Impact Assessment: Guidance for assessing and managing the social impacts of projects* (Vanclay et al. 2015), which consider social impacts as those on people’s lives, lifestyles and livelihoods. This informed the grouping of impacts as follows:

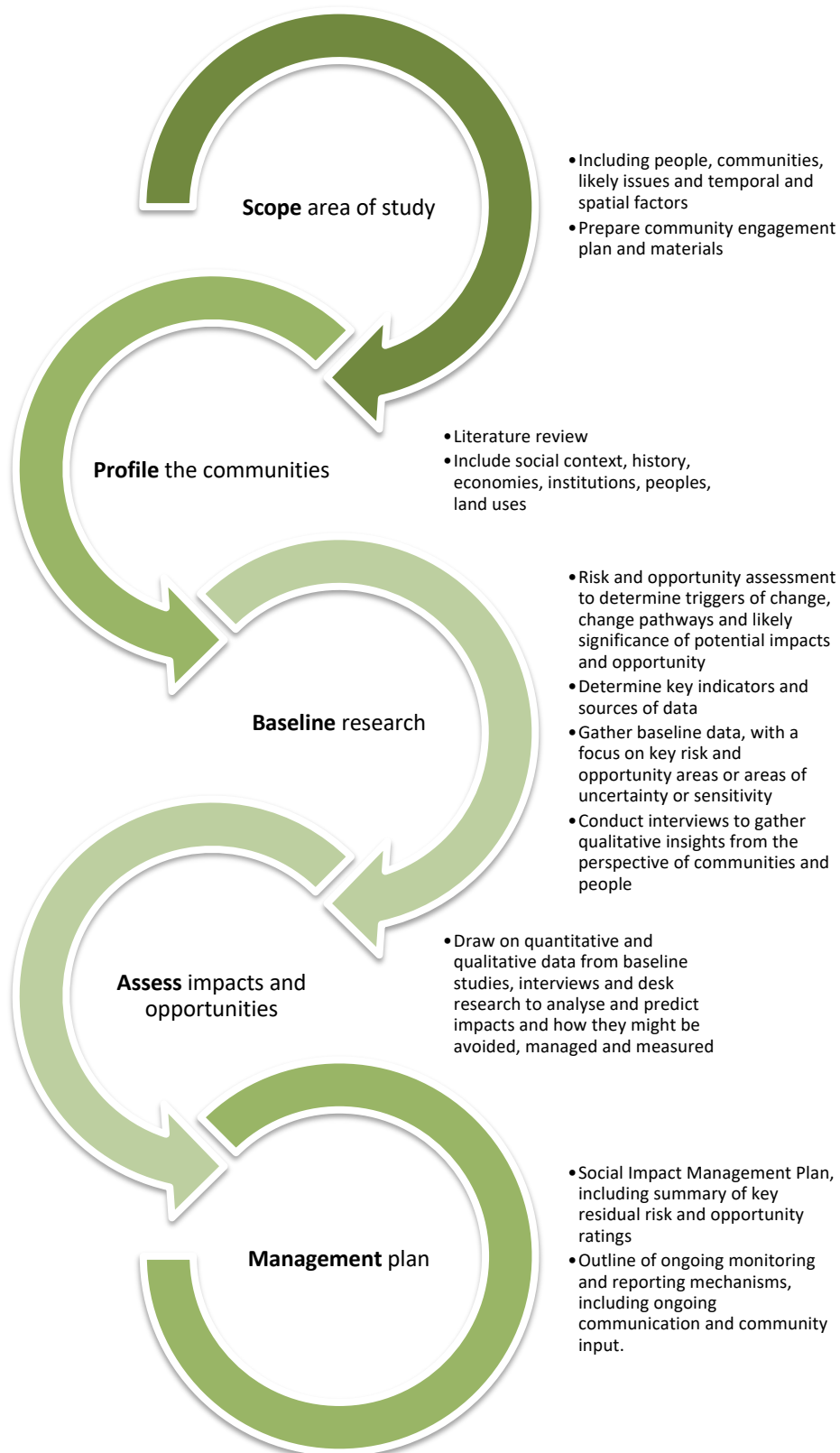


Figure 3: Grouping of social impacts

The scoping phase was followed by a compilation of baseline socio-economic data to provide an initial characterisation of the area under study. This baseline data was tested in more detailed research and interviews that provided local context and people’s perspectives of potential impacts and community aspirations and expectations.

The SIA looks at each of the identified risks and opportunities and draws on research and feedback from interviews to outline relevant change that has already occurred, describe predicted change, analyse and predict how this translates to social impacts and discusses ways of avoiding or managing negative impacts and optimising beneficial impacts.

The SIMP summarises the social findings and residual risk ratings, outlines measures to enhance beneficial impacts and avoid, mitigate or manage negative impacts. It establishes quantitative and qualitative indicators to provide ongoing measurement and reporting. The SIMP outlines recommended management plans and policies and gives a list of commitments for which Core will be accountable to both regulators and communities.



Outline of methodology



### 3.2 Issues identification

The scoping phase and the risk and opportunities assessment identified the following potential issues for the project:

- concerns about impacts to amenity in the region for nearby residents and along the transport route
- impacts on tourism sector from industrial traffic
- contracts awarded to local businesses meet local content
- community expectations of local content not realised
- local economies stimulated through payments to workers, contractors and local companies
- community expectations of boost to local economy not met
- direct and indirect local employment
- community expectations of local jobs not realised
- project traffic impacts road integrity
- impacts on the road network efficiency from project traffic
- increased pressure on police and emergency services
- increased road safety risk due to project traffic
- reduced enjoyment of the natural environment and recreational values
- destruction or damage to cultural or significant sites
- reduced access to and enjoyment of traditional cultural activities
- threats to environmental values from industrial activity
- concerns about impacts on the quality of groundwater
- breaches of human rights
- cumulative impacts of industrial activity on the environment and of increased industrialisation of the region.

## 4. Consultation and communication

Consultation is an important element in gaining qualitative insights and inputs to the SIA and providing longer-term guidance to the company's community relations and social performance.

Consultation for this project was guided by the International Association for Public Participation (IAP2) Core Values. The approach included broad stakeholder consultation as well as interviews specifically for the SIA.

Consultation was initially conducted in October 2017 and a second consultation was conducted between July and September 2018 in Berry Springs and Darwin.

#### 4.1 Consultation goal and objectives

The goal of the consultation was to gain an understanding of likely, actual and perceived social impacts of the project to inform the SIA.

The consultation objectives were:

- to listen to and understand the perspectives of all stakeholder groups
- to manage stakeholder expectations
- early identification of local knowledge that may contribute to better project design, avoiding mistakes or mitigating negative impacts
- to support delivery of a project that is environmentally, economically, culturally and socially acceptable to the community and key stakeholders (i.e. earn social licence to operate)
- to provide regulators with confidence that all positive and negative impacts are well understood and can be managed through all phases of the project
- to provide guidance to the company's long-term social performance.

The communication objectives were:

- to update stakeholders on the project status and in the lead-up to the submission of the Environmental Impact Statement (EIS)
- to identify stakeholders that should participate in the SIA
- to provide a tailored approach to communicating with different key stakeholder groups
- to build understanding, trust and relationships with individuals or groups likely to be positively or negatively impacted by the project
- to give the broader community opportunity to learn about the project and provide feedback.

A full report of stakeholders spoken to and issues raised is contained in the Consultation Report.

#### **IAP2 Core Values for the practice of public participation**

1. The public should have a say in decisions about actions that could affect their lives.
2. Public participation includes the promise that the public's contribution will influence the decision.
3. Public participation promotes sustainable decisions by recognising and communicating the needs and interests of all participants, including decision makers.
4. Public participation seeks out and facilitates the involvement of those potentially affected by or interested in a decision.
5. Public participation seeks input from participants in designing how they participate.
6. Public participation provides participants with the information they need to participate in a meaningful way.
7. Public participation communicates to participants how their input affected the decision.

International Association for Public Participation ([www.iap2.org.au](http://www.iap2.org.au))

Figure 4: IAP2 Core Values

#### 4.1 Key stakeholder groups

Key stakeholder groups were those identified as being within the project's area of influence or are likely to have an interest in the project or the potential to be impacted either positively or negatively by the project.

Diagram below outlines the key stakeholder groups. Further detail on these is provided in the Consultation Report.



Key stakeholder groups

#### 4.2 Structure of this report

The structure of this report is as follows:

- Section 1 contains the executive summary
- Section 2 contains the project description
- Section 3 explains the SIA methodology
- Section 4 explains the consultation and communication approach
- Section 5 discusses peoples and communities
- Section 6 discusses economies
- Section 7 discusses employment and education
- Section 8 discusses infrastructure and social services
- Section 9 discusses health, wellbeing and safety
- Section 10 discusses culture and heritage
- Section 11 discusses the environment

- Section 12 discusses human rights
- Section 13 discusses cumulative impacts
- Section 14 briefly explains the Social Impact Management Plan
- Section 15 outlines the qualifications of the consultants who prepared the SIA.

Section 5 to 13 each conclude with a summary of **suggested mitigation and management strategies** that are developed in greater detail in the SIMP.

## 5. People and communities

### 5.1 Overview

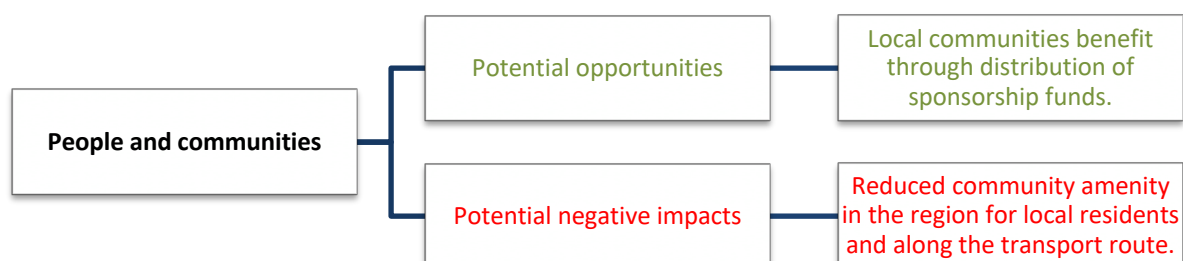
The first part of this section provides an outline of the region, key communities and areas in the project's area of influence including the Cox Peninsula and Berry Springs community. It then covers key demographic features and baseline data for the local communities and region. Section 5.8 then provides an assessment and prediction of likely change from the project and consequent social impacts.

### 5.2 Key events or activities causing impacts

Key events or activities creating change processes that may lead to positive or negative impacts for people and communities are:

- project starts and leads to an increase in heavy vehicle traffic on local roads
- mobilisation of workforce leading to more general traffic on the road
- blasting on site that will result in the 15 minute / three times per week closure of Cox Peninsula Road adjacent to the site
- announcements or rumours about the project (potentially causing fears and anxiety)
- sponsorship program begins, leading to benefits being distributed within the community.

### 5.3 Key risks and opportunities



The potential opportunities and negative impacts for people and communities

#### 5.4 The project area

The Grants Lithium project is located on vacant Crown land on the Cox Peninsula. It is located 15 kilometres south-east of the community of Belyuen and 36 kilometres west of the community of Berry Springs.

The project area is surrounded by bushland and is undeveloped. The main land use in the area is mining exploration and the area has a long history of exploration and mining activity dating back 100 years. There are several historic mine sites in the surrounding area.

The project site is accessed directly from Cox Peninsula Road, approximately 15 kilometres north of the Fog Bay Road turnoff. The site itself is about 500 metres off the Cox Peninsula Road.



Drilling on the  
project site



The project site

The immediate surrounding area is sparsely populated, however there are several nearby communities located along the proposed haul route between the project site and East Arm (Darwin) Port. This includes the communities of Berry Springs, Noonamah, Humpty Doo, Bees Creek, Freds Pass, Coolalinga and the outskirts of Palmerston and Darwin. Except for Palmerston and Darwin, the communities along the haul route are mostly small, rural communities.



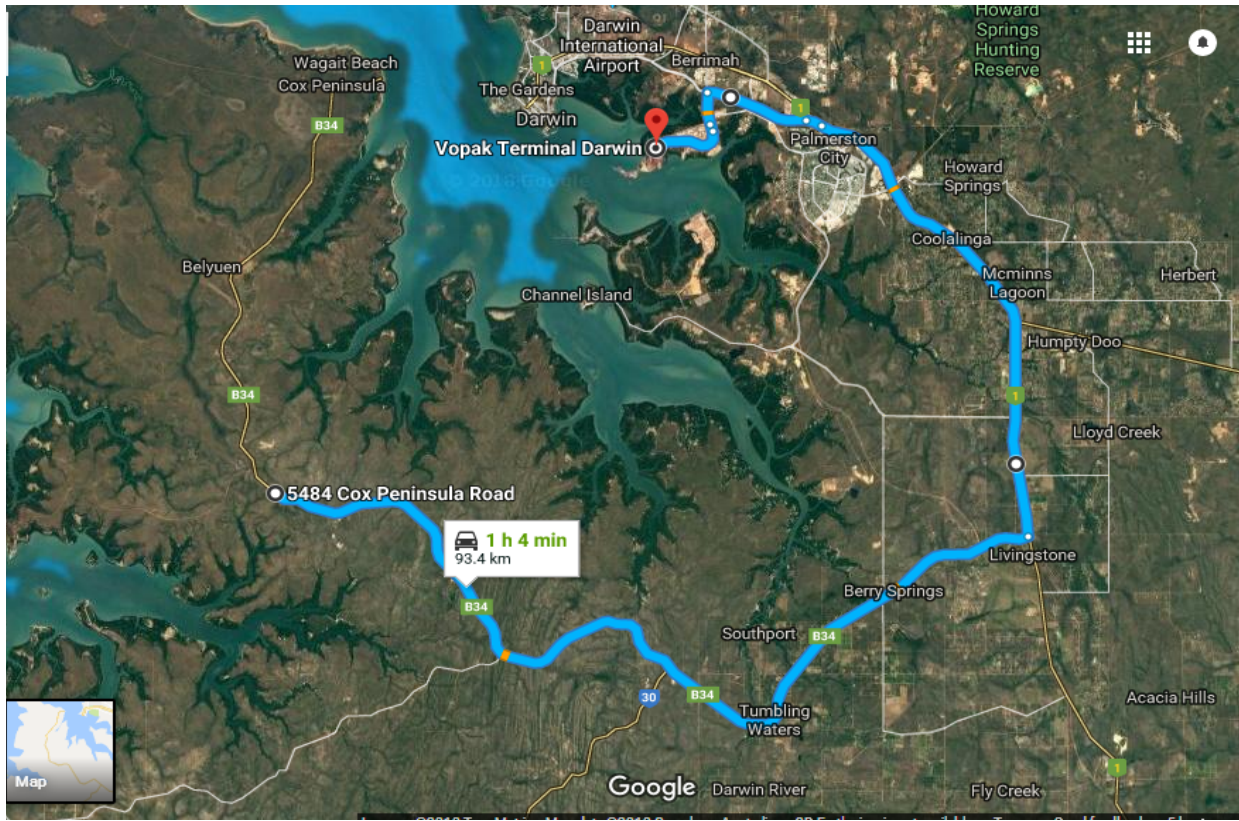


Figure 5: Map showing the location of the project area at 5484 Cox Peninsula Road, and the proposed transport route to East Arm Port. Source: Google maps

#### 5.4.1 Historical background – Cox Peninsula

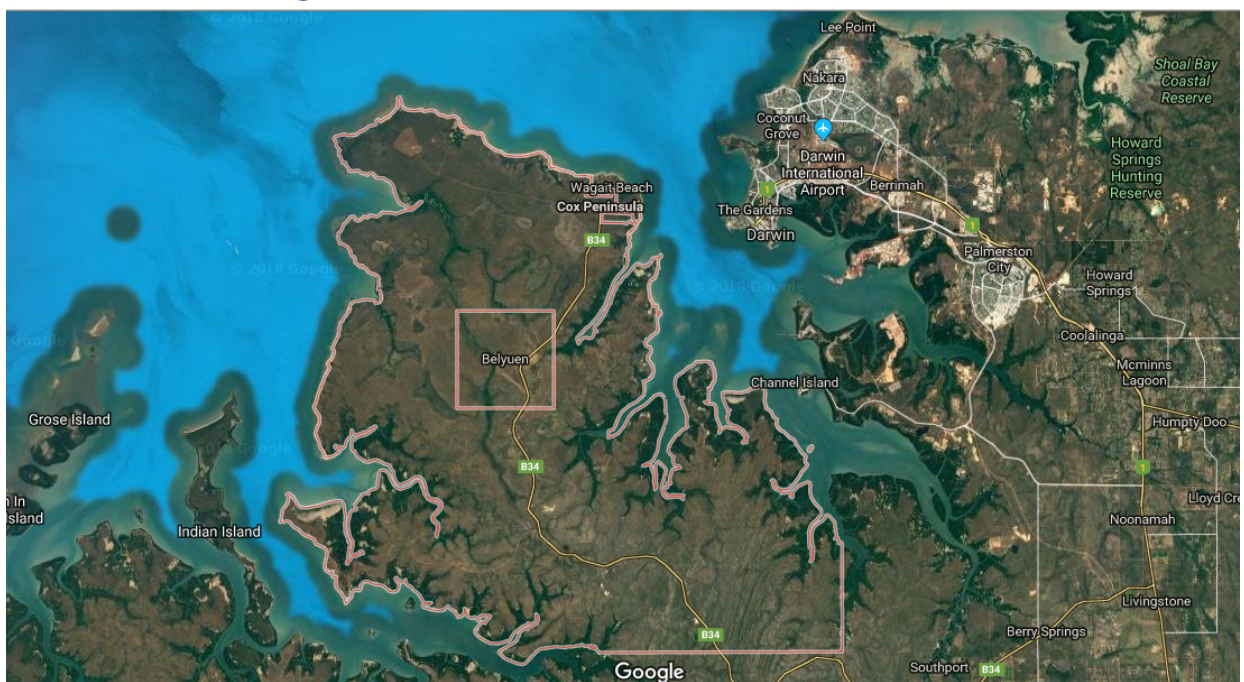


Figure 6: Map indicating the Cox Peninsula region where the project area is located. Source: Google maps

The Cox Peninsula is the section of land from the west of Berry Springs up to the west of Darwin, as marked on the map in figure 6. The Larrakia Indigenous people are the traditional owners of the Cox Peninsula. In 1979, to reclaim the rights to their traditional lands, the Northern Land Council on behalf of the traditional owners, lodged the Kenbi Land Claim, the longest running Aboriginal land rights case in Australian history (ABC 2016).

The peninsula was handed back to the Larrakia traditional owners in 2000 when the Northern Land Council won the case. In 2016, a large section of land on the Cox Peninsula was granted as Aboriginal land under the *Aboriginal Land Rights Act (Northern Territory) 1976* to settle the land claim. As part of the settlement, the Northern Land Council and Northern Territory Government negotiated an access agreement to allow people to access the beaches and waters for fishing without a permit, and to restrict or prohibit access to some other areas. The project area is not part of the Kenbi Land Claim and is not impacted by these negotiated access agreements.

The north-western tip and parts of the northern area of the Cox Peninsula were used by the Commonwealth government for more than 70 years for maritime, communications and defence purposes, which resulted in extensive contamination with asbestos, pesticides and heavy metals found in the area (ABC, 2015). The Australian Government has since arranged remediation of the land to restore the natural environment and made the site safe for future use (Ventia, 2018).

## 5.5 Key communities

The key communities considered to be part of the project's area of influence are:

- Berry Springs, due to the relatively short distance from the project site and being located directly on Cox Peninsula Road (and along the haul route)
- Belyuen, due to the proximity to the project site (however this community is not affected by the haul route)
- Tumbling Waters, as access to it is off Cox Peninsula Road (haul route)
- Wagait Beach and Dundee Beach – communities where the only or main land access is along Cox Peninsula Road
- some rural areas of outer Darwin (Noonamah, Bees Creek, McMinns Lagoon, Freds Pass, Coolalinga and Humpty Doo) are located along the haul route
- Darwin and Palmerston, likely to be a source of employment and service and supply, and residents may have an interest in the project as it is in the nearby region.

### 5.5.1 Berry Springs

Berry Springs is about 56 kilometres by road from Darwin and is within the Litchfield Council area. The name Berry Springs comes from “Berry Creek” named by Goyder in 1870 (Northern Territory Government 2007).

The Berry Springs community is a small rural settlement with a population of 818 and a median age of 35 (Australian Bureau of Statistics Census QuickStats, 2016). At the Census 2016, there were 348 houses and approximately 205 families living in Berry Springs.



Most of the residents of Berry Springs were born in Australia (75%), with the remaining population from England (3.7%), Vietnam (2.5%), New Zealand (1.7%), South Africa (1.1%) and Scotland (0.5%).

Berry Springs is the gateway to one of the Northern Territory's most popular tourist destinations, Litchfield National Park. It is also home to several popular tourist spots including the Territory Wildlife Park and Berry Springs Nature Park and waterhole, which is popular with tourists and locals.

Of those employed in Berry Springs, 7% worked in State Government administration, 4.9% in nature reserves and conservation parks operation, 3.3% in other fruit and tree nut growing, 3.3% in primary education and 2.7% worked in vegetable growing. The median weekly income for people aged 15 years and over in Berry Springs is \$1068 (ABS 2017).

Berry Springs is 36 kilometres east of the project area, and is on the haul route between the project site and the Port of Darwin.



Berry Springs township



Berry Springs Primary School

### 5.5.2 Belyuen

Belyuen is an Aboriginal community established as Delissaville in the 1940s and changed to Belyuen in 1975. The Larrakia people are the original inhabitants of the Belyuen area (Belyuen Shire Council 2017).

The Belyuen community is on the eastern side of the Cox Peninsula – 128 kilometres by sealed road from Darwin (or 20 kilometres south-west as the crow flies) and approximately 20 kilometres south of Mandorah. Regular daily ferries travel between Darwin and Mandorah and the journey takes less than 15 minutes (Belyuen Shire Council, 2009).

According to the Australian Bureau of Statistics, in the 2016 Census, the population of Belyuen was 164. Of the total population, 157 were Aboriginal and Torres Strait Islander. The median age in Belyuen was 29 and there was an average of 4.4 people per household. Most residents (132 people) said they speak another language at home and only 22 people said they speak English at home. There were 40 houses in the community. Of those, 13 households reported having no vehicle. The median weekly household income was \$850 (ABS Census, 2016).

The Indigenous people of Belyuen are the Wadjiginy, the Emmiyangal and the Mendheyangal (National Centre for Indigenous Genomics 2015).



There are seven language groups in Belyuen: Emmi, Wadigin, Kiuk, MalakMalak, Mendtha, Marriamu and Maranunggu. Belyuen has a transient population with high mobility between Belyuen and Bagot, One Mile Dam, Minmirama and 15 Mile. The Belyuen Shire Council reports the transient population is a result of relationships with people in Darwin and family conflict.

The community is serviced by the Batchelor Police Station about 88 kilometres away and fuel and food and limited groceries are available at the community store. There is an unsealed airstrip and a school (Northern Territory Government, 2018). The Belyuen Health Clinic is open 9 am to 4 pm (five days per week) and provides clinical and emergency services to the surrounding area up to the Dundee Beach turnoff (Wagait, Mandorah, Belyuen). An ambulance is located at the clinic.

The Belyuen Council provides a range of services including aged and community care, a women's centre, store, and a workshop employing three qualified mechanics to service Council vehicles and vehicles for customers from Wagait, Dundee, Berry Springs and Litchfield. Council also provides a free transport service to and from Mandorah wharf and Belyuen for family attending funerals. Regular health and legal and welfare services visit the community.

Belyuen Council reports one of the challenges for the community is creating employment and housing in the community so people can return from town camps and temporary accommodation elsewhere. A lack of information technology infrastructure is also an issue, with no national broadband network (NBN) service available to households. The council also reported drink driving and "hooning" as an ongoing issue for the community. Belyuen is an Alcohol Protected Area.

The Ironbark Aboriginal Corporation is an employment provider in Belyuen that works out of the local council office two days a week and seeks employment opportunities and placements for Belyuen residents (Belyuen Shire Council, 2017, p.10 – 21).

Belyuen is 15 kilometres north-west of the project area.

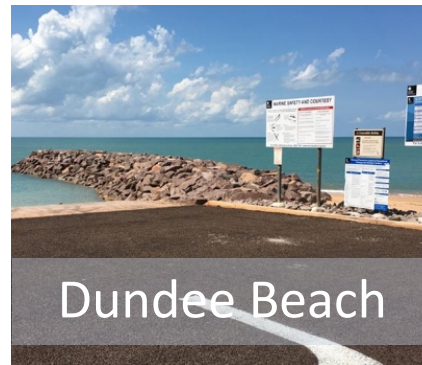
### 5.5.3 *Tumbling Waters*

Tumbling Waters, a small rural settlement in the Litchfield Council area had a population of 170 and a median age of 40 during the 2016 Census. Aboriginal people make up 12.6% of the population of Tumbling Waters. There were 81 people who reported being in the labour force in Tumbling Waters. Of these 64.2% were employed full time, 13.6% were employed part-time and 13.6% were unemployed (ABS Census, 2016).



#### 5.5.4 Wagait Beach

Wagait Beach is a small community of about 400 people on the north coast of the Cox Peninsula. Stakeholder interviews indicated that about half of Wagait Beach residents are professionals who work in Darwin. Most people use the ferry to and from Mandorah to travel to Darwin, however some use Cox Peninsula Road for their weekly shopping trips and other business.



#### 5.5.5 Dundee Beach

Dundee Beach is a small locality south-west of the Cox Peninsula that includes a tourist and fishing accommodation business, pastoral properties and some residential properties. The only access route to Dundee Beach is via Cox Peninsula Road.

#### 5.5.6 Outer Darwin

The areas of Noonamah, Bees Creek, McMinns Lagoon, Freds Pass, Coolalinga and Humpty Doo are small, outer rural suburbs south of Darwin city, located around the Stuart Highway. The areas are all part of the Litchfield Council Municipality. The project haul route passes through these areas, however most of the suburbs are rural areas not located directly on the Stuart Highway.

**Noonamah** is a quiet rural suburb about 45 kilometres south-east of Darwin with a population of 319 (ABS Census, 2016). Noonamah has experienced relatively fast growth in population and development in recent years. Residents mostly live on larger, rural blocks of land. The Noonamah Tavern and Tourist Park are located on the Stuart Highway.

**Bees Creek** is 33 kilometres south-east of Darwin with a population of 838 (ABS Census, 2016). It is a rural area with most residents living on large rural or bush blocks of land. It has become more popular in recent years, with people attracted to the quieter, rural lifestyle.

**McMinns Lagoon** is about 34 kilometres south-east of Darwin and is an outer rural suburb with a population of 796 (ABS Census, 2016). Residents live on mostly large rural blocks east of the Stuart Highway.

**Coolalinga** is an outer suburb 30 kilometres south-east of Darwin with a population of 548 (ABS Census, 2016). It is the main service centre for the Darwin rural area, with a large shopping centre, caravan park, hotel, takeaway outlets and specialty shops and services located along the Stuart Highway.

**Humpty Doo** is about 40 kilometres from Darwin, south of the Arnhem Highway. Most residents of Humpty Doo enjoy a rural lifestyle and commute to Darwin or Palmerston for work. It is a popular tourist stopover between Darwin and Kakadu National Park. Humpty Doo has a population of 4,380. Humpty Doo's town centre is accessed from the Arnhem Highway.

### 5.5.7 Darwin and Palmerston

Darwin and Palmerston are the nearest densely populated areas and are likely to be a source of employment and service and supply to the project.

Darwin is the capital city of the Northern Territory and according to the 2016 Census, has an estimated population of more than 136,000 people. Over half of the Northern Territory's population lives in Darwin. Palmerston is the second largest city in the Northern Territory and at the 2016 Census, the population of Palmerston was more than 33,000.

## 5.6 Governance and institutions

### 5.6.1 Northern Land Council

The Northern Land Council (NLC) is a Commonwealth statutory body operating under the *Aboriginal Land Rights Act 1976* and the native title representative body under the *Native Title Act 1993*. The NLC is responsible for helping Aboriginal people in the Top End of the Northern Territory acquire and manage their traditional lands and seas. Approximately 30,000 Aboriginal people live within the NLC region, which includes almost 200 communities from small family homelands to larger settlements.

A key role of the NLC is consulting with traditional landowners and Aboriginal people with an interest in affected land, and ensuring landowners give informed consent before any action is taken to affect their land and seas. As there are many major resource developments taking place on Aboriginal land subject to Native Title rights and interests, the NLC is responsible for ensuring Aboriginal people can express their views and if they provide informed consent, receive social, economic and cultural benefits from the projects (Northern Land Council 2018).

### 5.6.2 Northern Territory Government

The project is in the Northern Territory electorate of Daly, which surrounds Darwin City to the south and west of the Top End. It is bounded by Kakadu National Park in the east, the Fitzmaurice River in the south and Darwin Harbour in the north. Gary Higgins is the Country Liberal Party member for Daly and was elected in 2012 (Northern Territory Electoral Commission 2017).

The Northern Territory's Labor Government came to power in August 2016 in a landslide victory. The focus of the new government is devolving decision-making to local communities and regional economic development including jobs in tourism, horticulture and resource developments.

### 5.6.3 Australian Government

The project is in the Federal seat of Lingiari that covers much of the Northern Territory excluding the Darwin municipality and most of Palmerston municipality. It has been held by Labor Member of Parliament Warren Snowdon since 1987 (except for a short period between 1996 and 1998).

#### **5.6.4 Litchfield Council**

Litchfield Council is a local government authority established by the Northern Territory Parliament on 24 May 1985 (Litchfield Council 2017). In July 2008, the Litchfield Shire Council was changed to Litchfield Council under a revised *Local Government Act* that changed the structure of local government across the Northern Territory and is no longer known as a Shire.

The Litchfield Council area covers 3,100 square kilometres around the outskirts of Darwin. The area is home to more than 20,000 people enjoying a mostly rural residential lifestyle. The municipality is 25 kilometres from Darwin. The Litchfield Shire (as known until 2008) was named after Frederick Henry Litchfield and the land is the traditional home of the Larrakia, Woolner and Djowei Aboriginal people (Litchfield Council 2013).

The Litchfield municipality is bounded by the Adelaide River to the east, Van Diemen Gulf to the north, Coomalie Shire to the south and the cities of Darwin and Palmerston to the northwest.

The Litchfield Council Chief Executive Officer is Kaylene Conrick. Council comprises five elected members, a Mayor (Maree Bredhauer) and one Councillor for each of the four wards – north, south, east and central. In January 2015 Litchfield Council was placed under official management by the Northern Territory Government and a new council elected later the same year. As at 30 June 2017, Litchfield Council employed 53 staff.

The project area is just outside the boundaries of the Litchfield Council municipality area, however the transport route is within the Litchfield Council boundaries.

#### **5.6.5 City of Palmerston Council**

The City of Palmerston Council is made up of the Mayor (Athina Pascoe-Bell) and seven Aldermen, with the Deputy Mayor elected from the existing Aldermen. The council's organisation is led by the Chief Executive Officer Luccio Cercarelli. The City of Palmerston is bounded by the Litchfield Council area to the north, east, south and East Arm in the west.

The City of Palmerston has adopted a master plan for the city centre to guide infrastructure growth and development of the city for the next 20 years (City of Palmerston 2018). The City of Palmerston covers an area of almost 56 square kilometres, which is divided into 16 suburbs with a total population of just under 34,000. The City of Palmerston Council employs 80 staff across its various departments (City of Palmerston 2017).

In June 2017, the Northern Territory Government placed the City of Palmerston Council under official management and a new council was elected in March 2018.

Part of the project's transport corridor is within the City of Palmerston Council. It is expected that some of the workforce will come from Palmerston and that some goods and services for the project may be sourced from Palmerston.

### **5.6.6 City of Darwin Council – project corridor**

The City of Darwin Council is made up of the Lord Mayor (Kon Vatskalis) and 12 Aldermen. The council's organisation is led by the newly appointed Chief Executive Officer Scott Waters. The City of Darwin has four wards (Lyons, Waters, Chan and Richardson).

A small part of the project's transport corridor is within the City of Darwin, and it is expected that some of the workforce will come from the City of Darwin. Some goods and services for the project may also be sourced from the City of Darwin.

## **5.7 Demography**

The area under study is just outside the Litchfield Council Local Government Area, but within the ABS defined Unincorporated NT area. As the Unincorporated NT area covers vast distances dispersed across various areas in the Northern Territory, statistics from the ABS Litchfield Council Local Government Area (LGA) are used here for demographic data. Some of the data also draws on statistics from individual community profiles in the affected area and as Darwin and Palmerston are likely to be a source of employment, goods and services, relevant statistical data from Darwin and Palmerston, which fall under ABS statistical area Darwin (SA4) are also used.

### **5.7.1 Population**

The 2016 Census counted 228,833 usual residents of the Northern Territory on Census night, an increase of 8% from 2011. The population of the Darwin region (SA4) was 136,828 and Belyuen was 164. Litchfield is the fastest growing region in the Northern Territory, with 26% growth in the population since 2011 from 19,000 people to 24,000. Palmerston was the next fastest growing region in the Northern Territory with a population increase of 22% from 28,000 to 34,000 (ABS 2017).

The Northern Territory has a skewed gender profile, with 106 males for every 100 females (Northern Territory Government, 2018).

More and more migrants have come to call the Territory home in 2016. Almost a third of Territorians (31%) were born overseas, an increase from 25% in 2011 (ABS 2017).

Table 1 below shows the population composition at a local level based on 2016 ABS data. The table includes the population, median age, percentage of the population that is Aboriginal, the top three languages spoken at home and top three places of birth for each area.

### **5.7.2 Aboriginal population**

The Northern Territory covers one-sixth of Australia but at the 2016 Census, it had only 228,833 people living in an area of 1.35 million square kilometres. About a quarter of the population is Aboriginal, compared with 3% for Australia. The Litchfield Council LGA had a population of almost 24,000 in 2016, and just under 10% of these residents were Aboriginal. Belyuen (S) is an Aboriginal community with a population of 164, with 90% Aboriginal residents (ABS 2017).

The Larrakia people are the traditional owners of the Darwin region and are known as the "salt-water people". Their country extends from Cox Peninsula in the west to Gunn Point in the north, Adelaide River in the east and to Manton Dam in the south. There are about 2,000 Larrakia people in the

Territory today, with many being recognised for their strengths in music and art, as well as successes in mainstream business and government (Larrakia Nation n.d).

The Cox Peninsula was handed back to the Larrakia traditional owners in 2000 when the Northern Land Council won the longest running land rights case in Australian history. The Indigenous people of Belyuen are the Wadjiginy, the Emmiyangal and the Mendheyangal (National Centre for Indigenous Genomics 2015).

There are seven language groups in Belyuen: Emmi, Wadigin, Kiuk, MalakMalak, Mendtha, Marriamu and Maranunggu. Belyuen has a transient population with high mobility between Belyuen and Bagot, One Mile Dam, Minmirama and 15 Mile. The Belyuen Shire Council reports the transient population is a result of relationships with people in Darwin, and family conflict (Belyuen Shire Council, 2017, p.10 – 21).

### 5.7.3 Composition of the population

| Area                                                  | Characteristic                  | 2016 ABS Data                                         |
|-------------------------------------------------------|---------------------------------|-------------------------------------------------------|
| <b>Litchfield Council Local Government Area (LGA)</b> | Population                      | 23,855                                                |
|                                                       | Median age                      | 37                                                    |
|                                                       | % Aboriginal                    | 9.7%                                                  |
|                                                       | Language spoken at home (top 3) | 74.8% English<br>1% Vietnamese<br>0.4% Greek          |
|                                                       | Place of birth (top 3)          | 70.8% Australia<br>3% England<br>2% New Zealand       |
| <b>Belyuen (suburb)</b>                               | Population                      | 164                                                   |
|                                                       | Median age                      | 30                                                    |
|                                                       | % Aboriginal                    | 90.4%                                                 |
|                                                       | Language spoken at home (top 3) | 36.8% Australian Indigenous language<br>13.5% English |
|                                                       | Place of birth                  | 100% Australia                                        |
| <b>Berry Springs (suburb)</b>                         | Population                      | 818                                                   |
|                                                       | Median age                      | 35                                                    |
|                                                       | % Aboriginal                    | 9.2%                                                  |
|                                                       | Language spoken at home (top 3) | 83% English                                           |
|                                                       | Place of birth (top 3)          | 75% Australia<br>3.7% England<br>2.5% Vietnam         |
| <b>Darwin (SA4)</b>                                   | Population                      | 136,828                                               |
|                                                       | Median age                      | 33                                                    |
|                                                       | % Aboriginal                    | 8.7%                                                  |
|                                                       | Language spoken at home (top 3) | 67.9% English<br>2.3% Greek<br>1.9% Tagalog           |
|                                                       | Place of birth (top 3)          | 62.7% Australia<br>3.6% Philippines                   |



|                           |                                 |                                                     |
|---------------------------|---------------------------------|-----------------------------------------------------|
|                           |                                 | 3.1% England                                        |
| <b>Northern Territory</b> | Population                      | 228,833                                             |
|                           | Median age                      | 32                                                  |
|                           | % Aboriginal                    | 25.5%                                               |
|                           | Language spoken at home (top 3) | 58% English<br>1.9% Kriol<br>1.9% Djambarrpuyngu    |
|                           | Place of birth (top 3)          | 68.8% Australia<br>2.6% Philippines<br>2.4% England |
| <b>Australia</b>          | Population                      | 24 million                                          |
|                           | Median age                      | 38                                                  |
|                           | % Aboriginal                    | 2.8%                                                |

Table 1: Demographic composition based on 2016 Census data (ABS 2017).

#### 5.7.4 Age profile

The Northern Territory's population is the youngest in Australia, with 22.6% of residents being under 15 (compared with 18.8% nationally). Only 7% of the Territory's population is aged 65 or over, compared with 15% nationally, while 71% were of working age (15-64), compared with 66% nationally (Wilson, 2016). While high fertility and mortality rates shape the age-sex structure of the Territory's population, non-Indigenous structures are influenced by in-migration of young adults for work and net losses at other ages, with 115 non-Indigenous men for every 100 women in 2011, rising to 129 men for every 100 women for non-Indigenous residents aged 20-24.

The Northern Territory's median age is 32, compared to the national median age of 38. The Litchfield Council LGA median age of 37 is higher than Darwin (SA4) and the rest of the Northern Territory.

From 2005 to 2015, the Northern Territory's age structure has changed, with significant growth in both males and females aged between 20 and 34 years. This is a result of increases in employment in defence, mining, construction, education, public administration and health (Taylor & Wilson, 2016).

#### 5.7.5 Population mobility

In 2015, interstate arrivals and departures of 20 to 29 year olds were significantly higher for the Northern Territory than for all other states except the Australian Capital Territory. This high level of migration of young people in and out of the Northern Territory in 2015 reflects people moving for job and educational opportunities (ABS 2016).

In a research brief by Charles Darwin University's Northern Institute in 2016 (Taylor & Wilson), analysis of 2011 Census data illustrates that the population immobility in the Northern Territory and particularly Darwin, was lower than other jurisdictions in Australia, indicating more movement of the population.

#### 5.7.6 Population growth projections

According to the Northern Territory Department of Treasury and Finance (2014) population growth in the Northern Territory is more volatile than for the rest of Australia due to the impact of major projects on the Territory's interstate and overseas migration. Significant changes in the Northern Territory's annual population growth rate can be attributed to variations in interstate migration.

Taylor & Wilson (2016) report that the Northern Territory has a low population growth largely because of negative interstate migration. They attribute this to several factors including migration losses from several areas including Darwin, increases in departures, declines in arrivals of those aged 20 – 39 and non-arrivals of women and young families with children.

Northern Territory Department of Treasury and Finance (2014) population projections indicate an expected average annual growth rate of 1.7% in the Northern Territory from 2016 to 2021. The Northern Territory typically experiences large interstate flows of people into and out of the Territory, with about 7% of the population leaving and arriving each year. Predicted Aboriginal growth rates are based on natural increases.

The Government also predicts the population of the Greater Darwin region (includes Darwin city, Darwin suburbs, Palmerston and Litchfield) will increase to 157,708 by 2021, an average of 1.9% per year between 2016 and 2021.

### 5.7.7 Socio-economic indices

The ABS Socio-economic Indexes for Areas (SEIFA) is a suite of four indexes created from social and economic Census information. Each index ranks geographic areas across Australia in terms of their relative socio-economic advantage and disadvantage. A SEIFA score measures how relatively 'advantaged' or 'disadvantaged' an area is compared with other areas in the state and within Australia.

The Index of Relative Socio-economic Disadvantage, 2016 ranks Belyuen LGA as the most disadvantaged Local Government Area (LGA) in the Northern Territory. The City of Darwin ranks as the most advantaged LGA, followed by Litchfield Council LGA and Greater Darwin. Palmerston ranks as the fifth most advantaged LGA in the Northern Territory.

#### Index of Relative Socio-economic Disadvantage

| RDA Northern Territory's Local Government Areas and benchmark areas |            |            |
|---------------------------------------------------------------------|------------|------------|
| Area                                                                | 2016 index | Percentile |
| City of Darwin LGA                                                  | 1,041.0    | 71         |
| Litchfield Council LGA                                              | 1,040.0    | 70         |
| Greater Darwin                                                      | 1,038.0    | 69         |
| Wider Darwin                                                        | 1,035.0    | 67         |
| City of Palmerston LGA                                              | 1,027.0    | 62         |
| Unincorporated NT                                                   | 1,023.0    | 59         |
| Wagait Shire LGA                                                    | 1,011.0    | 52         |
| Alice Springs Town Council LGA                                      | 1,007.0    | 49         |
| Australia                                                           | 1,001.9    | 46         |
| Katherine Town Council LGA                                          | 991.0      | 40         |
| RDA Northern Territory                                              | 938.0      | 18         |
| Northern Territory                                                  | 938.0      | 18         |
| Central Australia                                                   | 877.5      | 7          |
| Coomalie Community Government Council LGA                           | 877.0      | 7          |
| Big Rivers                                                          | 807.0      | 3          |
| Regional NT                                                         | 786.0      | 3          |
| Barkly Regional Council LGA                                         | 679.0      | 2          |



|                                          |       |   |
|------------------------------------------|-------|---|
| Victoria Daly Regional Council LGA       | 657.0 | 2 |
| Tiwi Islands Regional Council LGA        | 630.0 | 1 |
| West Arnhem Regional Council LGA         | 622.0 | 1 |
| Roper Gulf Regional Council LGA          | 597.0 | 1 |
| MacDonnell Regional Council LGA          | 581.0 | 1 |
| Central Desert Regional Council LGA      | 492.0 | 1 |
| West Daly Regional Council LGA           | 441.0 | 1 |
| Belyuen Community Government Council LGA | 435.0 | 1 |

Source: Australian Bureau of Statistics, Census of Population and Housing 2016. Compiled and presented in profile.id by .id the population experts.

### 5.7.8 Community cohesion and resilience

Community cohesion is defined as the sense of harmony in a place, which can be established by the acceptance of social diversity, a shared sense of belonging across all groups, a broadly accepted vision and image of the location, reasonably similar life opportunities and access to services and positive relationships between people of different backgrounds (Vanclay et al., 2015:76).

Darwin's rural area spans the area beyond the City of Darwin and City of Palmerston and includes the Litchfield Council, Wagait Shire Council and Belyuen Shire Council. Berry Springs sits within the rural area and is the key community being assessed as part of this SIA, due to its proximity to the project site and being located on the haul route to Darwin Port. Berry Springs offers an open and laid back lifestyle but is at the doorstep of the conveniences of Palmerston and Darwin. As a small community, Berry Springs is tight-knit with many residents having lived there for decades. Discussions with locals and stakeholders revealed a community with a strong sense of identity who value the laid back and relaxed lifestyle.

The downturn in the mining boom across the Territory has been felt in this area with many locals losing jobs at the nearby Inpex Ichthys LNG Project, which is transitioning from construction to operations. The closure of the nearby abattoir in mid 2018 also resulted in some locals losing jobs, with many of those moving away from the Territory to find work elsewhere. Despite this, there is optimism in Berry Springs and the rural area for better times to come and proposals such as this project are generally perceived positively. This signals a strong resilience in a community that is, like other areas in the Northern Territory, adapting to challenging economic circumstances.

## 5.8 Impact assessment for people and communities

The above information provides background data and context for an examination of social opportunities and impacts from the Core Exploration Grants Lithium Project.

In assessing likely positive and negative impacts, this section considers change likely to be triggered by project activities such as project commencement resulting in heavy vehicles on the Cox Peninsula Road or blasting, which will result in Cox Peninsula Road being closed three times per week for up to 15 minutes. These changes are assessed in the project Risks and Opportunities Matrix.

Predicting positive and negative impacts includes a subjective assessment of community perceptions, level of concern about change and resilience or vulnerability to change.

The key positive impact presented to the local community of Berry Springs is the opportunity to benefit through Core providing sponsorship funds for local community groups, sporting groups and the local school.

### **5.8.1 Reduced community amenity in the region for local residents and along the transport route**

People choose to live in the rural area for the natural bushland, the relative peace and quiet and the laidback lifestyle. The Berry Springs community is located 36 kilometres from the project site and is positioned directly on Cox Peninsula Road (the project's haul route). This area is a popular tourist destination and is the gateway to Litchfield National Park and popular fishing locations dotted across the peninsula. The town therefore does experience peaks in traffic during the tourist season and on weekends and school holidays, however this traffic is made up of mainly cars and cars towing boats and caravans.

The haulage of the concentrate from the project site to Darwin Port will see a fleet of three quad road trains travelling up to a total of ten round trips from the mine site to Darwin Port per day. This is likely to disrupt the peace and quiet of this community mainly through the noise and movement of the trucks passing through. The project will operate 24/7, however the haulage of the concentrate will be only during the day. The product being transported is a gravel-like substance and all trucks will be covered, therefore dust from transportation is not expected to impact on people along the haul route.

Locals and stakeholders, including the Berry Springs Primary School and Litchfield Council, expressed some concern about quad road trains travelling through Berry Springs and surrounding area and said this would be a noticeable change.

The community of Belyuen is closer to the project site, however it is not located on the haul route, therefore amenity of this community will not be impacted by truck movements through town.

Adjacent to the site, impacts on amenity are marginal given that the surrounding land is mostly unoccupied bushland, some of which has been previously disturbed by mining activity. Activities on site, including on-site truck movements, site clearing and preparations, processing and lights at night will be negligible given the remoteness of the site from residential areas.

Dust as a result of site clearing and preparations and movement of earth at the mine site is likely to be present along Cox Peninsula Road near the mine, however dust monitoring and management will be in place to minimise this. It is not expected that dust will impact any nearby communities.

The impact of road closures for the blasting will be felt by commuters on Cox Peninsula Road. It is expected to impact commuting times and flow of traffic, which is discussed further below. It is not expected that residents will hear or feel the blasting as the closest neighbour is about five kilometres from the project site at Observation Dam Hill.

The roads further along the haul route (the remainder of Cox Peninsula Road, Stuart Highway, Tiger Brennan Drive and Berrimah Road) already carry a large volume of traffic, including road trains. These areas are higher density areas and are already experiencing significant traffic volume, including road trains, with the roads being built for this purpose. Therefore, it is not expected that an additional 10

road trains from this project will result in an impact on amenity of these areas (Noonamah, Coolalinga, Palmerston).

As the workforce is expected to be sourced locally where possible, or relocated to the area, there will not be any accommodation camp. Therefore, impacts on amenity from an influx of mine workers is unlikely.

This risk (#1) had an initial risk rating of MODERATE, but with mitigation and management the residual rating was assessed as LOW.

### 5.8.2 Local communities benefit through distribution of sponsorship funds.

It is expected that the local community will benefit through the distribution of sponsorship funds to community groups. Core has expressed a willingness to work with local stakeholders to minimise negative impacts as much as possible, through various management strategies and by providing sponsorship funds to enhance benefits to the community. Discussions have already commenced between Core and Berry Springs Primary School.

This opportunity (OP1) was initially assessed as LOW, which was upgraded to MODERATE with the development of a sponsorship plan to ensure the most affected stakeholders and communities benefit from the project.



Berry Springs  
Primary School



Berry Springs  
Community Market

## 5.9 Mitigation and management

- Develop and implement an Environmental Management Plan that will identify measures to minimise dust and noise. This should include best practice dust management and visual monitoring of dust emissions on Cox Peninsula Road, and additional dust management if required.
- A Blasting Management Plan to address any noise and safety issues related to the blasting activity.
- Prepare a Traffic Management Plan that identifies ways to minimise traffic impacts on the local communities and stakeholders.
- Implementation of speed restrictions through Berry Springs.

- Use traffic monitoring data to identify peak traffic times and take into consideration feedback from stakeholders when determining blasting times.
- Ongoing and early communication of planned blasting times to all stakeholders to minimise disruption to traffic by increasing awareness.
- Communicate the decision-making process for the blasting times to the community to ensure transparency.
- Ongoing engagement with Berry Springs Primary School on truck movements.
- Develop and implement a local sponsorship program focusing on the most impacted stakeholders.

## 6. Economies

### 6.1 Overview

The first part of this section provides an outline of the economy in Darwin and the other areas in the project's area of influence, including Palmerston and the rural area. It then covers the economic output for the region, industry trends, income profiles and business counts. Section 6.7 then provides an assessment and prediction of likely change from the project and consequent economic impacts.

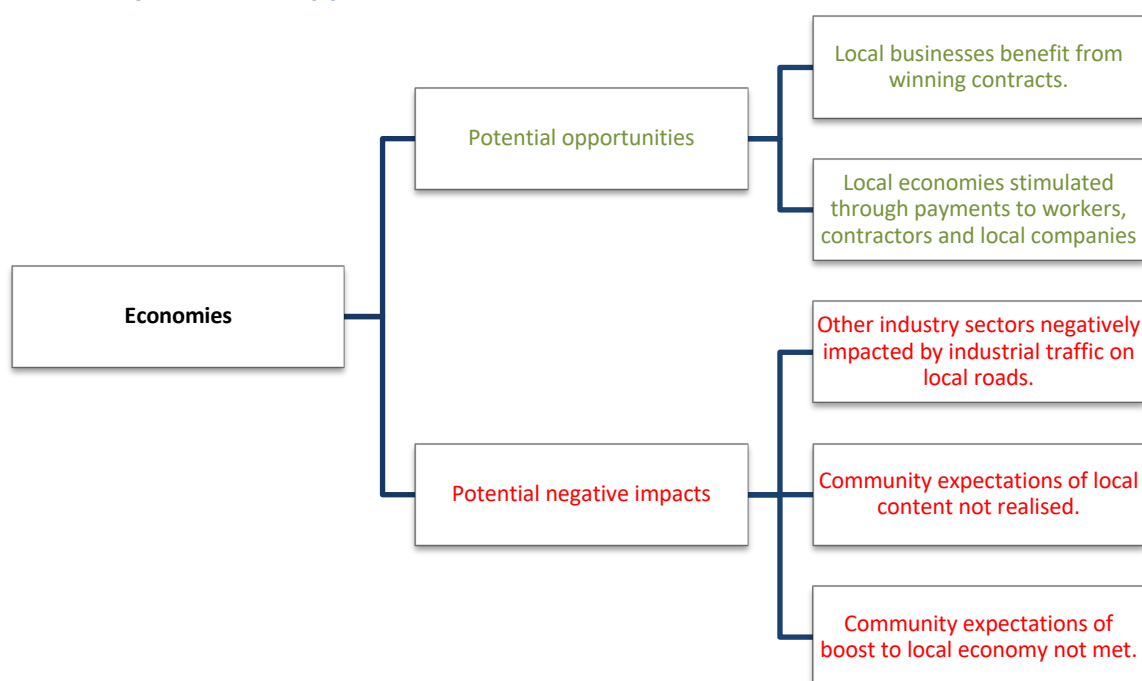
The economic data is largely drawn from ABS statistics for the Northern Territory, Litchfield Council LGA and the Greater Darwin region, which includes Darwin City SA3, Darwin suburbs, Palmerston and Litchfield.

### 6.2 Key events or activities causing impacts

Key events or activities causing economic impacts or opportunities are likely to be:

- mobilisation leading to an increase in industrial traffic on the road
- placement of employment advertising
- local procurement and awarding of contracts
- mobilisation leading to recruitment of workers from Darwin, Palmerston and the rural area
- local companies missing out on work.

## 6.3 Key risks and opportunities



The potential opportunities and negative impacts for the economy

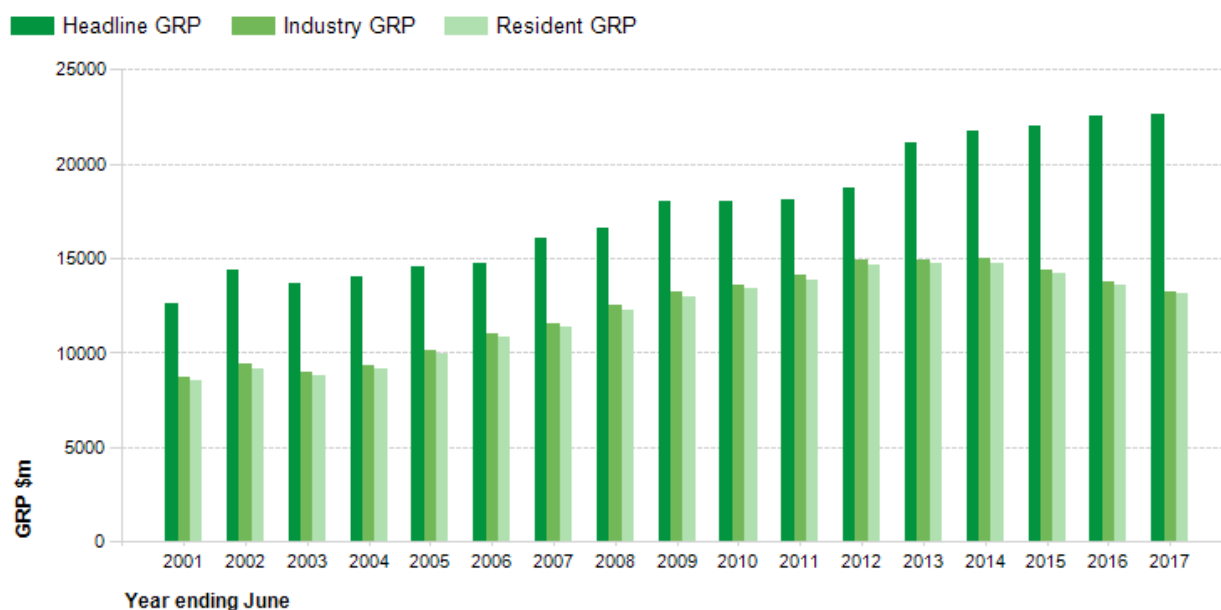
## 6.4 Economic output for the region

According to .id the population experts (2017), the key indicator for measuring the economic performance of a region is Gross Regional Product (GRP), which is compiled as a subset of the Gross State Product (GSP) and which in turn makes up the overall Gross Domestic Product (GDP) of a nation. The measure can be presented for three groups – headline, local industry and residents.

As shown in Figure 7 below, the Northern Territory's Gross Regional Product was \$22.61 billion in the year ending June 2017 – an increase of 0.5% on the previous year.

There has been a steady increase in Headline GRP in the Northern Territory since 2011, with the largest growth from 2012 to 2013. There was a steady increase in both Industry GRP and Resident GRP in the Territory from 2003 to 2014, but a decline from 2014 to 2017 (National Institute of Economic and Industry Research [NEIR] 2016, cited in .id, the population experts, 2017).

## RDA Northern Territory - Gross Regional Product



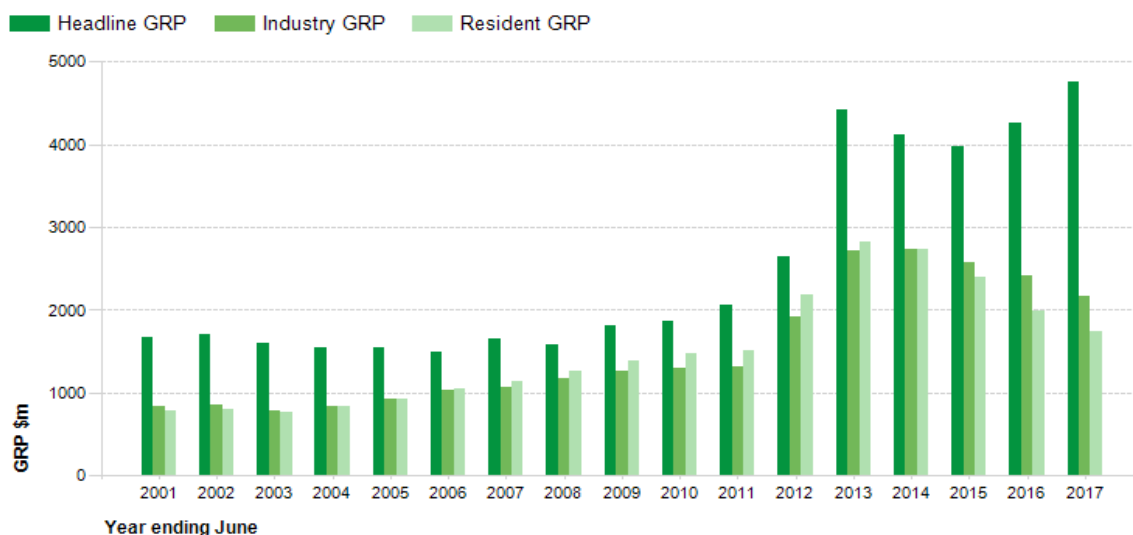
Source: National Institute of Economic and Industry Research (NIEIR) ©2016  
Compiled and presented in economy.id by .id the population experts

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Figure 7: Gross Regional Product in the NT 2001 – 2017 (Source: National Institute of Economic and Industry Research [NIEIR] 2016, cited in .id, the population experts, 2017).

Litchfield Council LGA Gross Regional Product was \$4.76 billion in the year ending June 2017, growing 12% since the previous year, as shown in Figure 8 below.

## Litchfield Council LGA - Gross Regional Product



Source: National Institute of Economic and Industry Research (NIEIR) ©2016  
Compiled and presented in economy.id by .id the population experts

.id the population experts

Figure 8: Litchfield Council LGA Gross Regional Product

### 6.4.1 Industry trends

Value added by industry is an indicator of business productivity. It shows how productive each industry sector is at increasing the value of its inputs.

#### Litchfield Council LGA

In the Litchfield Council LGA, construction is the most productive industry, generating \$1,868 million in 2016–17 (NEIR 2016, cited in .id, the population experts, 2017).

An analysis of the valued added by industry sectors in the Litchfield Council LGA (as shown in Figure 8) in 2016–17 shows the three largest industries were:

- construction (\$1,868 million or 42.6%)
- public administration and safety (\$775 million or 17.7%)
- manufacturing (\$559 million or 12.8%).

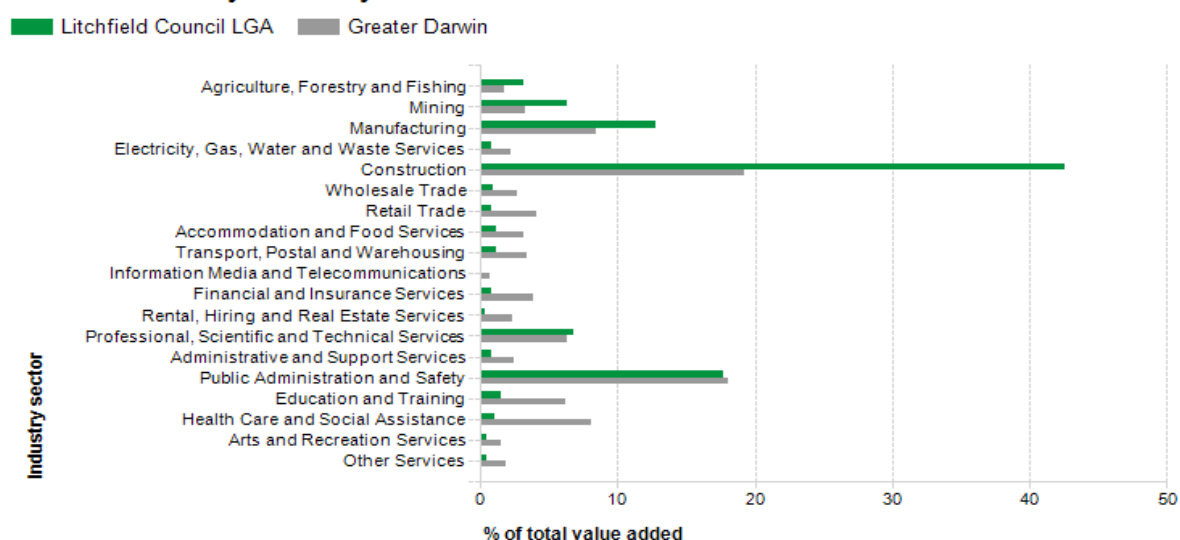
In combination, these three industries accounted for a total of \$3,202 million or 73% of the total value added by industry in the Litchfield Council LGA.

Figure 8 shows the change in the value added by industry sector from 2011–12 to 2016–17. The most significant changes were:

- an increase of \$1,362 million in the construction sector
- an increase in professional, scientific and technical services (\$258 million)
- an increase of \$86 million in the public administration and safety sector.

The total value added by industry increased by \$99.8 million from 2011–12 to 2016–17.

#### Value added by industry sector 2016/17

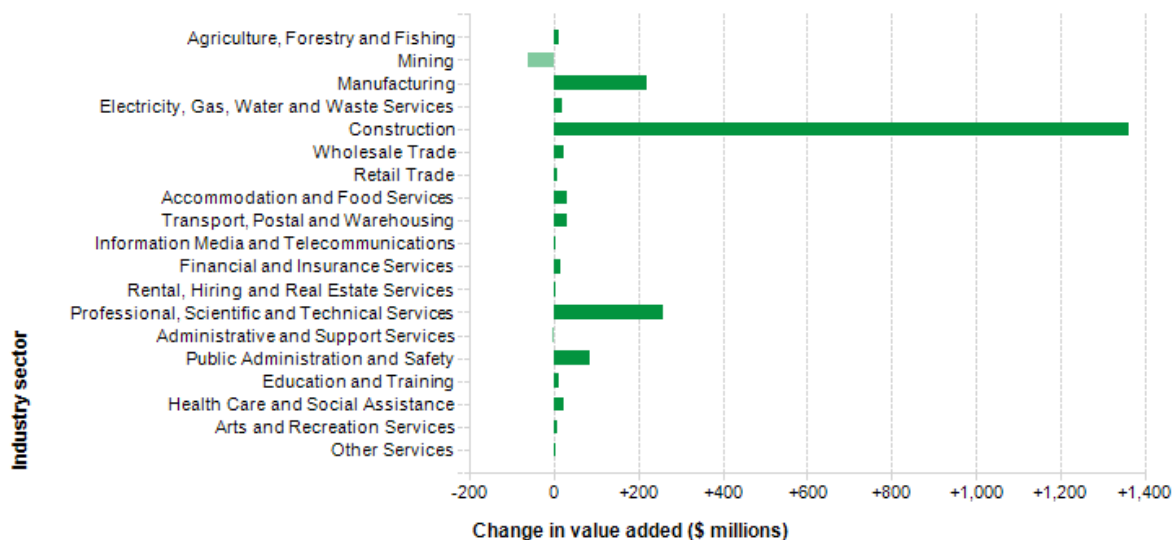


Source: National Institute of Economic and Industry Research (NIEIR) ©2016  
Compiled and presented in economy.id by .id the population experts

Figure 9: Value added by industry sector 2016–17 for Litchfield Council LGA and Greater Darwin (Source: NEIR 2016, cited in .id, the population experts, 2017).

## Change in value added by industry sector, 2011/12 to 2016/17

Litchfield Council LGA



Source: National Institute of Economic and Industry Research (NIEIR) ©2016  
Compiled and presented in economy.id by .id the population experts

.id the population experts

Figure 10: Value added by industry sector 2016–17 for Litchfield Council LGA and Greater Darwin (Source: NEIR 2016, cited in .id, the population experts, 2017).

As at 30 June 2015, there were more than 10,000 businesses in the Greater Darwin region, which included 2,402 construction businesses, 362 manufacturing businesses and 65 mining businesses.

In the Litchfield Council LGA for the same period, there were 1,773 businesses, which included 552 construction businesses, 1047 professional, scientific and technical services, 64 manufacturing and 21 mining businesses (NEIR 2016, cited in .id, the population experts, 2017).

The Northern Territory Budget 2018–19 Regional Highlights provides an economic summary of the Palmerston and Litchfield region, which includes the City of Palmerston, Litchfield Shire, East Arm and Robertson Barracks, south to Darwin River Dam and north to Wickham Point. According to the report, key industries in the region are aquaculture, horticulture, cattle and crocodile farming, defence, liquefied natural gas (LNG) and helium production.

### 6.4.2 Aquaculture, horticulture, cattle and crocodile farming

The Northern Territory horticulture industry is comprised of fruit, vegetables, nursery products, turf and hay. According to the NT Farmers Association, the value of horticulture production in the Northern Territory was estimated at \$253 million in 2016. The mango industry accounted for almost 35% of the total value of farming production (excluding forestry) (Northern Territory Government, 2018).

Aquaculture in the Territory mostly consists of pearls and barramundi with some aquarium fish and spirulina production.

The cattle industry is important to the Northern Territory economy with the industry generating expenditure on cattle transport, stock feed, wages, port charges and demand for services. In 2016–the 17, about 513,600 head of live cattle were exported to overseas and interstate markets.



In 2016–17, the Northern Territory crocodile industry generated about \$23 million, a decrease of \$7 million from the previous year due to stricter grading standards. (Northern Territory Government, 2018).

#### **6.4.3 Construction**

The Northern Territory's construction industry is driven by major projects in mining, resource or defence. Growth in the construction industry in the Northern Territory reached its second highest level on record for the 2016–17 period following expansion over the past five years due to major projects (Northern Territory Department of Treasury and Finance 2018).

The construction industry is likely to contract with the completion of the construction phase of the Inpex project, however other smaller projects in the Territory are likely to support the industry.

#### **6.4.4 Mining and manufacturing**

Mining and manufacturing contributes to the Northern Territory economy through international trade, private investment and employment. These industries also impact the construction sector as mining and manufacturing projects normally require significant construction input (Northern Territory Department of Treasury and Finance 2018).

#### **6.4.5 Tourism**

Tourism is a key economic sector for the Northern Territory, particularly in regional areas. The project area is part of the Greater Darwin tourism region, which includes the City of Darwin, City of Palmerston, Noonamah, Humpty Doo, Fogg Dam, Gunn Point, Mandorah, Litchfield National Park and Batchelor.

The Greater Darwin region had a reported 938,000 overnight visitors for the year ending June 2017. Almost a quarter of those visitors were visiting friends and relatives (222,000), just over a quarter (250,000) were business visitors and 409,000 were tourists on holiday. Of the holiday visitors, 204,000 were interstate visitors, 106,000 were intra-Territory and 99,000 were international visitors. Visitors spent an average of 7.4 nights in the region with a total expenditure of \$1,089 million. The average spend per trip was estimated at \$1,275 (Tourism NT, 2017).

The tourism industry in the Top End is expected to be affected by the transition of the Inpex project from construction to production in 2018, however the Northern Territory Government plans to implement a \$103 million tourism stimulus package to boost leisure visitor numbers in the region (Northern Territory Department of Treasury and Finance 2018).

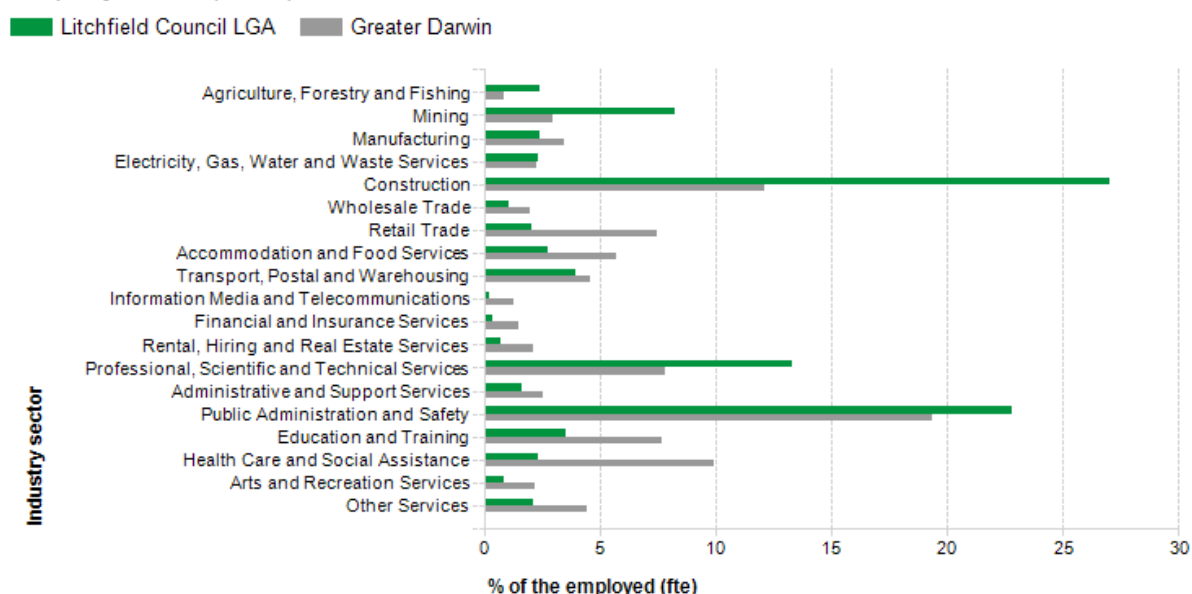
Tourism Research Australia (TRA) expects average annual growth of 2.6% in domestic tourism visitors and 5.8% for international visitors to the Territory (Northern Territory Department of Treasury and Finance 2018).

#### **6.4.6 Employment by industry**

The 2016 Census statistics for the Darwin SA4 region report that the largest employer in the region is public administration and safety making up 18.6% of total employment. This is followed by construction employing 12% of the workforce and health care and social assistance (9.4%). Mining employed 2.1% of the total Darwin SA4 population.

Data from the National Institute of Economic and Industry Research (NEIR), cited in .id, the population experts (2016) shows that construction was the largest employer in the Litchfield Council LGA in 2016–17, generating 4,792 full-time equivalent jobs and making up 27% of total employment. Public administration and safety is the second largest employer with 22.8%. This is followed by professional, scientific and technical services (13.3%) and mining (8.2%). Figure 11 illustrates employment by industry in 2016–17 in the region.

## Employment (FTE) 2016/17



Source: National Institute of Economic and Industry Research (NIEIR) ©2016  
Compiled and presented in economy.id by .id the population experts

.id the population experts

Figure 11: Industry sector of employment for Litchfield Council LGA and Greater Darwin, 2016–17 (Source: NEIR 2016, cited in .id, the population experts, 2017).

## 6.5 Income profile

In 2016, Territorians recorded the country's second-highest median weekly income at \$871, with the Litchfield Local Government Area recording the highest median income at \$1,090 a week (ABS 2016 Census).

According to the Australian Bureau of Statistics, the Darwin SA4 median total income (excluding Government pensions and allowances) in 2015 was \$71,185. The median household income in 2016 was \$1,316 per week compared to \$850 for Belyuen. In Litchfield Council LGA, 33.7% of households earned an income of \$2,500 or more per week in 2016.

## 6.6 Business counts

In 2017, the construction industry had the largest number of total registered businesses in Litchfield Council LGA, making up 30.9% of all registered businesses. This was followed by agriculture, forestry and fishing (13.2%) and 9.3% of all registered businesses in the region were rental, hiring and real estate services (NEIR 2016, cited in .id, the population experts, 2017).

In the Darwin SA4 region, the construction industry also had the highest number of registered businesses with 2,352 businesses or 22.3%. This was followed by rental, hiring and real estate services (13.8%) and professional, scientific and technical services (10%). Manufacturing had 3.5% of the total registered businesses in the area.

## 6.7 Assessment of economic risks and opportunities

### 6.7.1 *Other industry sectors negatively impacted by industrial traffic on local roads*

Other industry sectors such as tourism, the cattle industry and horticulture (particularly mango farms) may be impacted by the increased industrial traffic on the road from the project.

Tourists and locals use the Stuart Highway and Cox Peninsula Road to access the Territory Wildlife Park, Litchfield National Park, Berry Springs, Dundee Beach, Crab Claw and other popular tourist locations. They visit the area for fishing, camping, recreation and attractions. The Department of Tourism and Culture (DTC) and the Amateur Fishermen's Association of the Northern Territory (AFANT) confirmed that Cox Peninsula Road is a well-used route for locals and visitors and that the presence of industrial traffic on Cox Peninsula Road may impact on commuters travelling there.

The Northern Territory Government is currently sealing the Litchfield Park road and is due to be completed in 2020. The DTC expects that these road improvements will lead to an increase in the volume of traffic using Cox Peninsula Road to access Litchfield National Park. It is unlikely that tourist numbers will be affected by the project however tourist traffic may be delayed along Cox Peninsula Road during road closures for blasting. This is likely to be an inconvenience to commuters with traffic delays or slow traffic increasing travel times.

Seafarms Group is working to develop one of the world's largest prawn farms at Legune Station in the Northern Territory. As part of the proposed Project Sea Dragon project, Seafarms had received approval to build its Core Breeding Centre and Broodstock Maturation Centre at Point Ceylon at Bynoe Harbour, with access off Fog Bay Road. While Project Sea Dragon has not yet received a financial investment decision, if the project was to go ahead there will be increased traffic on Fog Bay Road and Cox Peninsula Road during construction and operations.

There are cattle stations scattered across the Litchfield and Cox Peninsula areas and cattle trucks travel from pastoral properties to Darwin Port during mustering periods. The Northern Territory Cattlemen's Association (NTCA) confirmed that local stations use Cox Peninsula Road to transport their cattle to Darwin Port. The road closure at site for blasting may result in delays and slowing of traffic.

There are also a number of mango farms across Darwin's rural area, and transportation of mangoes along Cox Peninsula Road may be similarly affected by the traffic delays. Communication with all potentially affected industries will be needed to ensure this is managed carefully.

This risk (#2) had an initial risk rating of LOW given the small volume of additional truck movements and the residual rating remained at LOW following mitigation such as a Traffic Management Plan, road signage and community and stakeholder engagement.

### ***6.7.2 Local businesses benefit from winning contracts***

There is an expectation that the project will provide service and supply opportunities to local businesses in the rural area, Palmerston and Darwin. There is also an expectation that local businesses have the capabilities to do the work required and will be awarded contracts, particularly at a time of economic downturn.

The project has substantial infrastructure advantages, and is less than one hours' drive from skills, trades, workshops and services in Palmerston and Darwin. With this comes a strong sense of optimism for the opportunities that this project offers to local businesses and this formed the basis of the support many local people had for the project.

The nature and scope of the project is likely to match well with the experience and capacity of small businesses in these areas, which should lead to good local content outcomes. During the SIA interview the Chamber of Commerce and the Industry Capability Network confirmed that businesses in Darwin, Palmerston and the rural area have the experience and capacity available and could service this project well.

This opportunity (OP2) was initially assessed as MODERATE with the residual rating remaining at MODERATE following recommended mitigation, including working with the business community to package and promote tenders, combined with the likely capacity of local businesses to provide services.

### ***6.7.3 Community expectations of local content not realised***

While there is the expectation of local jobs and contracts, these expectations may not be realistic due to the scale (small) and duration (short) of the project. Local procurement is a significant potential benefit of the project, however barriers may exist in realising this, including:

- a lack of relevant skills and capabilities
- reluctance to tender because of the standards and paperwork required
- challenges of recruiting staff in the Territory
- higher overheads reducing competitiveness
- local companies being fully committed to other project work.

Local businesses may fail to win contracts because they lack the capacity, specialist skills, are ill-prepared or are simply not competitive. It will be important to manage any unrealistic expectations by clearly communicating the timing and nature of opportunities, standards required to win work and business support programs.

This risk (#3) had an initial risk rating of LOW and the residual rating remained at LOW following recommended mitigation.

#### ***6.7.4 Local economies stimulated through payments to workers, contractors and local companies***

It is evident from the SIA interviews that there is a level of expectation amongst the Darwin, Palmerston and rural business community that the economy will be boosted by this project.

As Core has committed to employing local rather than sourcing workers from interstate and operating on a fly-in-fly-out basis, workers will live locally and payments to workers, contractors and local companies will remain in the area and stimulate the local economy. Sourcing goods and services locally will provide some additional economic stimulus at a time when the economy in the region is slowing.

Due to the small scale of the project and the relatively short operating timeframes for the mine, it is expected that the local economy will benefit, however it is not likely to have a major impact.

This opportunity (OP3) was initially assessed as LOW due to the size and scale of the project which was upgraded to MODERATE residual rating following recommended mitigation.

#### ***6.7.5 Community expectations of boost to local economy not met***

This risk is linked with opportunity (OP3) discussed above. While there is the expectation of a boost to the local economy, expectations may exceed reality due to the scale and duration of the project.

This risk (#4) was initially assessed as LOW, which remained at a LOW residual rating with appropriate measures such as packaging tenders in a way that suits local businesses (where this is commercially reasonable), communicate opportunities and manage expectations.

### **6.8 Mitigation and management**

The following mitigation measures will enhance economic opportunities and minimise risks:

- Develop and implement a Traffic Management Plan to manage traffic delays and impacts to traffic movements.
- Ensure road signage before and along Cox Peninsula Road to inform motorists of traffic delays, road trains and include safe driving messages.
- Ongoing communication and engagement with stakeholders around traffic.
- Package tenders in a way that suits local businesses (where this is commercially reasonable), communicate opportunities and manage expectations.
- Specify minimum local service and supply requirements in agreements with contractors.

## 7. Employment and education

### 7.1 Overview

The main employment industries in the Darwin region SA4 are government administration, defence, hospitals, primary education and other heavy and civil engineering and construction (ABS Census, 2016).

The Darwin region has low unemployment, however employment figures are expected to rise with the completion or closure of some key projects in the region.

This section provides an overview of education, employment and labour force in the Darwin region, Litchfield LGA and where data is available, the Belyuen community. It discusses the potential risks and opportunities for employment and education on the local communities because of the project, and outlines the recommended mitigation and management measures.

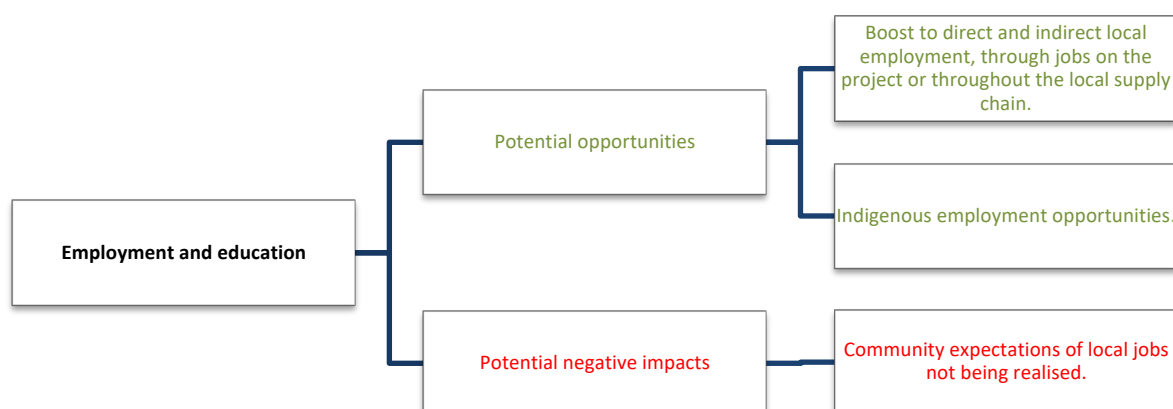
The key potential opportunities are direct and indirect jobs for locals and local Indigenous people, while the potential negative impact is the expectation of those jobs not being realised.

### 7.2 Key events or activities causing impacts

Key activities creating opportunities and risks for employment and education outcomes include:

- mobilisation of construction workforce
- local people winning jobs directly with Core Exploration or with contractors
- contracts awarded to companies for supplies and services
- local companies missing out on work
- local people not getting work, or the level of work expected.

### 7.3 Key risks and opportunities for employment and education



The potential opportunities and negative impacts for employment and education

## 7.4 Educational outcomes

Educational attainment figures from ABS Census QuickStats for Darwin SA4 report that of people aged 15 and over in Darwin, 20.4% have a Bachelor degree level and above as their highest level of educational attainment, 19.2% had completed a Certificate III or IV and 14.2% report Year 12 as their highest level.

Figures for Litchfield LGA show that of people aged 15 and over in the region, 9.4% have a Bachelor degree level and above as their highest level of educational attainment, 24.9% had completed a Certificate III or IV and 11.3% report Year 12 as their highest level.

In line with educational figures for other Indigenous communities in the Northern Territory, the educational attainment figures for nearby Belyuen aren't as positive as the surrounding urban areas. Nobody in the community reported having a Bachelor or post-graduate degree, and a very small number of residents reported their highest level of education being a certificate qualification. Fewer than 20 people reported completing Year 12 (ABS Census, 2016).

The key goal of the Northern Territory Department of Education's NT Strategy 2018 – 2022 is a strong public education system providing all children with the opportunity to engage, grow and achieve. Annual school priorities for Northern Territory public schools are identified each year based on the five-year strategy (Northern Territory Department of Education 2018).

## 7.5 Labour market

At June 2017, the Northern Territory's labour force consisted of about 143,100 people. The labour market performance in 2016–17 reflected the large workforce requirements of the Inpex project. Employment growth is expected to contract in 2018–19, following the completion of the construction phase of the project. Unemployment in the Territory is also expected to increase because of the reduction in workforce requirements for the Inpex project (Northern Territory Department of Treasury and Finance 2017).

Employment conditions for the resource sector have slowed in recent years with the completion of several projects and the closure of some mining developments. The number of people employed in the construction industry has already declined by about 1,800 people in the last two years (Northern Territory Department of Treasury and Finance 2017).

The Northern Territory Government aims to stimulate economic activity and attract private investment to support local industries as the Inpex project construction phase ends.

Employment figures for the Darwin SA4 region (ABS Census QuickStats) reports that 69.4% of the labour force worked full time, 19.8% worked part time and 4.6% were unemployed.

Employment statistics for Belyuen (ABS Census, 2016) are rather bleak with a total of eight people reported as working full time, and three people working part time. The unemployment rate for Aboriginal Australians of working age in 2014–15 was 20.8% – 3.6 times the non-Indigenous unemployment rate of 5.8%.

Feedback from stakeholder interviews was that there are some people in the area who have lost their job on the construction phase of the Inpex project, or at the abattoir that recently closed, and that people would be looking to this project for local work. Feedback also indicated that very few people in Belyuen are likely to be work-ready.

## 7.6 Unemployment profile

According to the Northern Territory Department of Trade, Business and Innovation Labour Market Brief for May 2018, the Northern Territory's unemployment rate was 4%, the second lowest in Australia after the Australian Capital Territory (3.7%). The Northern Territory had the highest participation rate of all Australian jurisdictions at 76.4%.

In January 2018, 61.5% of employees in the Northern Territory were employed in the Greater Darwin region. The construction industry had the second highest industry share of employment in the Territory with 10.6% after public administration (14.9%) (Northern Territory Department of Trade, Business and Innovation 2018).

The Census QuickStats data reports the unemployment rate for Darwin SA4 at 4.6% and 3.9% for the Litchfield LGA. Most residents of working age in Belyuen were reported as not being in the labour force.

## 7.7 Employment providers

The Ironbark Aboriginal Corporation is an employment provider in Belyuen that works out of the local council office two days a week and seeks employment opportunities and placements for Belyuen residents (Belyuen Shire Council, 2017, p.10 – 21).

The Larrakia Development Corporation, which provides employment and business opportunities for Larrakia people through the corporation's entrepreneurial activities, works with many large corporations with contractual or joint venture arrangements.

There are other employment providers in the region that can provide employment, training and workplace support for Indigenous workers.

## 7.8 Assessment of employment and education risks and opportunities

### *7.8.1 Boost to direct and indirect local employment, through jobs on the project or throughout the local supply chain*

Core anticipates employing 100 to 150 workers on the project, which is expected to last for two to three years. The company has indicated it will source local workers for the project wherever possible, which will boost local employment figures. It is expected that some expertise will need to be sourced from interstate.

During stakeholder interviews, there was feedback that recent job losses from construction on the Inpex project and closure of the nearby abattoir had affected many local residents and that people would be pleased to hear of more employment opportunities in the area. Livingstone Beef, located just outside Berry Springs, announced in May 2018 that it was suspending operations at the abattoir. The abattoir employed about 200 people (Burton, Brann, 2018).



While the unemployment figures for the Darwin region are low, this is expected to increase due to the end of the construction phase of the Inpex project. If the timing is right, there may be opportunities for workers to transition directly from the Inpex project to this project.

The project will not include an accommodation camp as workers will be sourced locally where possible and anybody employed from outside of the Territory will be encouraged to relocate to the region. People living in Darwin, Palmerston, the rural areas and surrounding communities such as Berry Springs, Wagait, Mandorah and Belyuen are all within an easy commuting distance to the project site.

Employment is expected to remain fairly constant over the life of the project. The breakdown of the workforce is likely to be contractors, operators, technicians and tradespeople, professionals, supervisors and senior management. The mining and haulage activity is expected to be delivered by contractors, while the remaining activities will be undertaken by Core employees.

Core is committed to maximising local employment and content, with recruitment and procurement processes prioritising the local market. This will ensure Territorians and local businesses with the appropriate skills and services have an opportunity to benefit from the project.

This opportunity (#OP4) was rated as MODERATE due to the number of expected jobs available and the relatively short duration of those jobs, however Core's commitment to prioritising local employment will benefit locals directly and indirectly through the supply chain.

### **7.8.2 Community expectations of local jobs not realised**

There is a risk that people will have unrealistic expectations about the number of jobs available on the project and that their expectations won't be met. There is often an assumption that mining projects will employ hundreds of people, therefore ongoing communication with the community about the expected number of jobs available and the duration of those jobs will be essential to minimise this risk.

As many people in the region have experience and skills in construction and mining industries, and combined with the recent job losses in the region, it is unlikely that Core will encounter difficulties employing locally.

This risk (#5) is assessed as LOW due to the likelihood and consequence of it occurring. Mitigation measures reduce the likelihood from possible to unlikely while the consequence remains the same.

### **7.8.3 Indigenous employment opportunities**

Government and the community have an expectation that the project will provide employment opportunities for local Indigenous people.

While the project is only 15 kilometres from an Indigenous community (Belyuen) where there are unemployed people, this doesn't automatically mean there is a pool of work-ready people available. The Ironbark Aboriginal Corporation (Ironbark) provides employment services to regional and remote communities in the area, including Belyuen, Batchelor, Berry Springs, Humpty Doo and Acacia. Ironbark advised that about 15 people from the region, mostly Indigenous, had recently completed their Certificate III in Civil Construction. It also reported that there were some people in Belyuen

working part-time, some are work-ready while others are not. NT Police indicated that while there may be a few people who have the skills, other issues such as a lack of driver's licences and drug and alcohol problems make it more difficult to find suitable workers.

The extent of opportunities for Indigenous people will depend on job readiness, due to the short-term nature and scale of the project. Ironbark advised they provide a work placement support person which would improve employment outcomes and retention of Indigenous people to transition from the construction phase of the Inpex project.

There are also opportunities to employ Indigenous workers through contracts with organisations such as the Larrakia Development Corporation, which would benefit Larrakia people. Larrakia Development Corporation expressed an interest in being kept informed in this regard.

There may also be additional employment opportunities for Indigenous workers during the rehabilitation and closure phase of the project, with replanting and rehabilitation of the mine site.

This opportunity (#OP5) was initially rated as LOW but with enhancement measures in place, increasing the likelihood of employment opportunities for Indigenous people, it increases it to MODERATE.

## **7.9 Mitigation and Management**

In order to maximise the opportunities and minimise risks on employment issues, it is suggested Core adopt the following measures:

- Communicate with the community about project detail including expected number of jobs, to minimise unrealistic expectations.
- Work with Ironbark Aboriginal Corporation, Larrakia Development Corporation or other Indigenous employment and training providers to maximise employment opportunities for Indigenous people.
- Provide support to contractors to employ and train local Aboriginal people.
- Liaise with other large projects about the opportunities to transition staff.

## 8. Infrastructure and social services

### 8.1 Overview

The key impacts of project activity on infrastructure and social services are the impacts on roads and traffic and this is a key area of concern for stakeholders. It is also possible that the project will result in increased pressure on police, fire and emergency services.

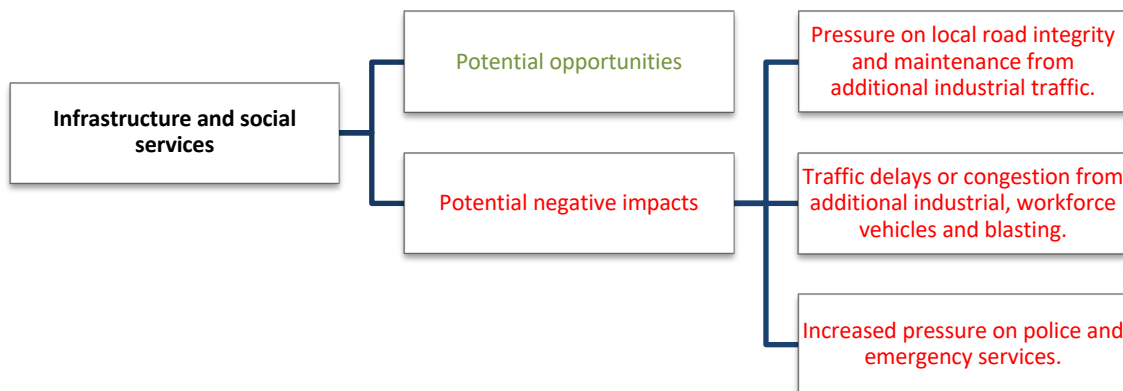
It is unlikely that the project will impact on power, housing and accommodation, health services, education services (except for impacts to Berry Springs Primary School addressed in other sections of this document), or other infrastructure and social services in the region.

### 8.2 Key events or activities causing impacts

Key project activities that could lead to impacts on infrastructure and services are:

- industrial traffic on local roads
- project mobilisation
- workforce mobilisation
- scheduled blasting activity and associated road closure.

### 8.3 Key risks and opportunities



The potential opportunities and negative impacts for infrastructure and social services

### 8.4 Key social infrastructure and services in the region

As the project area is close to both rural communities and the urban centres of Darwin and Palmerston, there is significant social infrastructure in the region, in line with other Australian cities and urban centres.

Infrastructure and services in Berry Springs includes the Berry Springs Primary School, medical centres, a tavern, cafes, fuel station and shopping centre. There are similar services and infrastructure in each of the surrounding rural centres.

The Northern Territory 2018–19 budget (2018) included infrastructure spending of \$12 million for Coolalinga traffic management infrastructure and \$4.5 million to construct a new regional bushfire response centre at Livingstone.

## 8.5 Transport

### 8.5.1 Road

The project site is 36 kilometres west of the community of Berry Springs on vacant Crown Land. It is accessed via Cox Peninsula Road which links Wagait Beach in the north-west with the communities of Belyuen, Tumbling Waters, and Berry Springs and the Stuart Highway.

The planned route to transport the export product from the project site to the Darwin Port is via the Cox Peninsula Road, north along the Stuart Highway from Livingstone and then along Berrimah Road to Darwin Port. A Heavy Vehicle Route Assessment conducted by Flanagan Consulting Group in 2017 identified the preferred route, which has a total travel distance of 88.31 kilometres.

Cox Peninsula Road is the main access route to Berry Springs Nature Reserve, the Territory Wildlife Park and leads to coastal communities including Wagait Beach and Dundee Beach. According to the Department of Transport's 2015 Annual Traffic Report (most recent available), the Stuart Highway end of Cox Peninsula Road experiences just over 2,000 traffic movements per day while the same road near Pioneer Creek Bridge, close to the project area, experienced 572 vehicle movements per day in 2015.



The Stuart Highway, the main highway in the Northern Territory connecting Darwin and the northern region to the central and southern regions, recorded a total of 12,276 vehicle movements per day (500 metres north of the Arnhem Highway intersection) in 2015 (Department of Transport 2015).

Berrimah Road south of Tiger Brennan Drive experienced 9,179 traffic movements per day in 2015 (Department of Transport 2015).

The transport route is an established road train route with all roads quad road train approved. The Annual Traffic Report 2015 also reports that the Cox Peninsula Road at Pioneer Creek Bridge had restricted access for 69 days between December 2014 and February 2015 due to water over the road.

The Coolalinga traffic management project announced as part of the Northern Territory budget 2018 includes improvements to the Stuart Highway in Coolalinga to address road safety, improved traffic movement and to accommodate future growth (NT DIPL, 2017). This section of road is part of the project's transport route between the project site and Darwin Port.



Intersection at Stuart Highway  
and Cox Peninsula Road, from  
Cox Peninsula Road



Intersection at Stuart Highway  
and Cox Peninsula Road, from  
Stuart Highway

Cox Peninsula Road is a narrow road in sections and stakeholders have said can make overtaking difficult. There is a mix of traffic that uses the road including trucks moving cattle from nearby pastoral properties, tourists travelling to and from Litchfield National Park, Territory Wildlife Park and other tourist locations, local fishermen travelling to and from popular fishing spots, school buses and school traffic going to and from Berry Springs Primary School, and locals commuting to and from work.

### 8.5.2 Port

The Port of Darwin is Australia's nearest port to Asia and is the northern gateway for Australasian trade. It is operated by Darwin Port Operations Pty Ltd which is part of the Landbridge Group.

At the port, the product will be stockpiled before being loaded onto ships for export to China. Core has an agreement with Darwin Port for export of up to 1 Mt per annum.

There will be one ship per week transporting the product from Darwin Port to China.

## 8.6 Police and emergency services

The project site falls within the boundaries of the Humpty Doo Police Station, which is about 60 kilometres away and is the closest police station to the site.

The Humpty Doo Police Station services the area from Mary River/Point Stewart across to Wagait, Mandorah and Dundee. There is a crew of 12 officers on rotation 24 hours a day, with two officers scheduled for each shift.

The Northern Territory Emergency Service (NTES) is a division of the NT Police, Fire and Emergency Services (NTPFES) and has a small team of 19 employees and more than 300 volunteers providing emergency response services across the Northern Territory. Staff in the Berrimah office in Darwin coordinate volunteers for the Darwin region including the project area (NTPFES, nd).

The Northern Territory Fire and Rescue Service (NTFRS) has a total of 26 fire and rescue facilities throughout the Northern Territory. The closest fire station to the project site is in Humpty Doo, which is open weekdays and there is also a volunteer fire brigade at Humpty Doo. The next closest fire station to the project site is Palmerston (NTPFES, nd).

Bushfires NT is a government agency responsible for rural bushfire management in the Northern Territory. There are five management zones, one of which is the Vernon Arafura zone that covers the project area. Bushfires NT provides support and works with landowners and the community to manage bushfires through mitigation, management and suppression activities, and by coordinating landowner and volunteer participation in response to significant fires (Northern Territory Department of Environment and Natural Resources, 2018).

The Northern Territory Government announced the construction of a new regional Bushfires NT headquarters in Livingstone in the Darwin rural area to better prevent and respond to bushfires. The new headquarters will replace the Batchelor and Winnellie offices, with construction expected to start in 2019 (Northern Territory Government, 2018).

St John Ambulance services the Darwin, Palmerston and rural areas extending out to 150 kilometres from the Darwin central business district. There are four ambulances servicing this area, with ambulances in Darwin, Casuarina, Palmerston and Humpty Doo. There are 90 staff working on rotation in the northern region. The response time for an ambulance to Dundee Beach is one hour minimum.

A health clinic in Belyuen, which has its own ambulance, provides clinical and emergency service for all areas to Fog Bay Road, which would include the project area.

## **8.7 Health services**

The Palmerston Regional Hospital, a newly constructed facility that is expected to be operational and open to the public in mid-2018, is the closest hospital to the project site. Palmerston Hospital will provide a range of healthcare facilities including all-hours emergency care. The Royal Darwin Hospital remains the major hospital in the Northern Territory providing major emergency and complex trauma care.

There are various health facilities and private medical practices in the area, including in Berry Springs, Humpty Doo, Coolalinga, Palmerston and Darwin.

St John Ambulance is the provider of road ambulance services in the Northern Territory with bases across the Territory, including in Darwin, Casuarina, Palmerston and Humpty Doo.

## **8.8 Education facilities**

Berry Springs Primary School is the only public school in the immediate project area. It is the major primary school in the rural area, catering for students from preschool to Year 6 with 227 students enrolled at the school. The school has a before and after school care service that starts at 7.30 am and closes at 6 pm. School hours are 8.30 am to 3 pm. Holiday care is also provided at the school during school holidays.

Taminmin College is the main public high school for the rural area, catering for students from Years 7 to 12.

There is a range of local public and private primary, middle and high schools throughout Darwin and Palmerston, servicing the Top End region.

## 8.9 Housing and accommodation

Housing availability in the Darwin and Palmerston region has improved recently due to slowing economic activity and subdued population growth. As supply has increased relative to demand, this has also improved rental and purchasing affordability of units and houses. Residential property demand is likely to remain subdued for some time (NT Department of Treasury and Finance, 2018:55).

The Real Estate Institute of the Northern Territory local market report (2018) reveals the median house price in Darwin in the quarter to June 2018 was \$500,000, an almost 20% drop on the same period three years ago. Unit prices for the same quarter are \$485,000, more than 20% lower than the same period three years ago.

Median house rentals are \$481.50 per week and unit rentals \$357.50 per week, a drop of more than 25% for both houses and markets compared to three years ago.

Darwin vacancy rates are 5.6% and Palmerston's are 8.5%, largely a result of people departing the region and tenants moving back closer to the city.

Availability and costs of housing and accommodation are unlikely to be impacted by the project due to the low employment numbers and the expectation that the majority of workers will be employed locally.

Any workers from outside the Northern Territory will be encouraged to relocate to the region, however any interstate workers that do travel to the region from interstate will be accommodated at established accommodation providers.

## 8.10 Assessment of infrastructure and services risks and opportunities

### *8.10.1 Pressure on local road integrity and maintenance from additional industrial traffic*

Core selected Cox Peninsula Road as part of the main transport route following stakeholder feedback in October 2017 that indicated the alternative route (via Finn Road and Elrundie Road) was not suitable for road trains.

Stakeholder discussions revealed that Cox Peninsula Road floods during heavy rainfall in the wet season and increases the risk the road will be damaged by heavy vehicles. The Department of Infrastructure, Planning and Logistics advised that weight restrictions will apply on the road during flooding.

The risk (#6) was assessed as LOW due to the weight restrictions during flooding and the relatively small number of trucks that will be using the road.

### *8.10.2 Traffic delays or congestion from additional industrial, workforce vehicles and blasting*

It is almost certain that there will be traffic delays and congestion along Cox Peninsula Road, mainly as a result of the blasting activity that requires road closures. Cox Peninsula Road will be closed three days per week for approximately 15 minutes for blasting at the mine. This is the time that it takes to close the road, blast the open pit and then check the road for fly rock. This will result in traffic delays



or congestion on and around Cox Peninsula Road immediately adjacent to the site, which will impact motorists, including locals, commuters, fishermen, tourists, school buses and school traffic and pastoralists and horticulturalists transporting cattle or produce.

With a fleet of three quad road trains travelling up to a total of ten round trips from the mine site to Darwin Port per day, there may also be slow traffic in sections where overtaking is difficult or unsafe. Although the number of road trains is relatively small and won't result in a large increase in the volume of traffic, it will be noticeable for the rural area and particularly along Cox Peninsula Road, which is a relatively narrow road.

Feedback from stakeholder interviews indicated that people would be concerned if their travel along Cox Peninsula Road was delayed. The Amateur Fishermen's Association of the Northern Territory asked that Core schedule their blasting times around peak travel times for fishermen in the area (Friday and Sunday afternoons), and also indicated that fishermen are likely to get frustrated if they are stuck behind a truck on the road. Feedback from the DTC was that open and transparent communication will be needed around the road closures and expressed concern about impatient fishermen with boats trying to overtake the quad road trains when it's unsafe. DTC also asked if there is a possibility of diverting the road around the site so it can remain open. Other stakeholders requested that road closures at certain times of the day be avoided.

The road closures and resulting traffic delays were a major concern for St John Ambulance as they indicated that the road closures will affect emergency vehicle access to areas such as Dundee Beach, Belyuen, Wagait and Mandorah. This will impact all emergency vehicles.

The project traffic is unlikely to create traffic delays or congestion along the Stuart Highway given that it is dual lane and major projects such as Inpex, have used this route in the past with more trucks.

This risk (#7) was initially assessed as HIGH and reduced to MODERATE with mitigation. The initial high rating was mainly because traffic delays and congestion are almost certain to occur. Mitigation reduces the consequence of this risk.

### ***8.10.3 Increased pressure on police and emergency services***

It is anticipated that road trauma, bushfires, spills, workplace incidents or other emergencies could increase as a result of the project and could increase pressure on emergency services, however given the scale and duration of the project, the risk is not considered high.

Feedback from St John Ambulance is that as the mine site is likely to have an on site medic who can attend to any on site medical emergencies until emergency services arrive, on site emergencies are unlikely to place additional pressure on the service. Both St John Ambulance and NT Police however expressed concern about increased road trauma with tourists and local traffic sharing the road with industrial traffic on Cox Peninsula Road where overtaking is difficult (discussed further in section 8.10.2 above).



Feedback from NT Police during stakeholder interviews was that the main work for the Humpty Doo Police Station is anti-social behaviour, domestic disturbances and road policing activities, with the busiest time of day being around school times and late afternoon/evening periods.

Police indicated their main concern with the project is the increased risk of road trauma and also reported that the closure of Cox Peninsula Road will affect emergency access to other areas, impacting their ability to respond adequately to emergencies. The impact of the road closures affecting emergency vehicle access to areas such as Dundee Beach, Belyuen, Wagait and Mandorah was also a concern for St John Ambulance.

Bushfires NT were concerned about the blasting and the impact that this may have on the fire suppression work that takes place on the Cox Peninsula. This fire suppression work includes helicopter activity, which normally takes place early in the dry season. Core will need to communicate with Bushfires NT regarding blasting times to ensure helicopter fire suppression work is not impacted by blasting at the mine.

Bushfires NT confirmed that the area surrounding the site has a high incidence of bushfires. They suggested that an Emergency Management and Response Plan (incorporating a Fire Management Plan) be developed by Core so that there was a process in place on site in the event of a bushfire. Fire management training would also assist with their on site fire management efforts if required.

Police also raised the issue of adequate security measures in place on site with storage of explosives as any incident involving explosives would obviously endanger lives and property.

There is potential for increased pressure on police, fire and emergency services in the region, therefore this risk (#8) was initially assessed as MODERATE but was reduced to LOW with mitigation measures in place.

### **8.11 Mitigation and management**

It is suggested that Core adopt the following mitigation strategies to minimise these identified impacts. Measures include:

- Ongoing engagement with the Department of Infrastructure, Planning and Logistics (DIPL).
- Prepare a Traffic Management Plan to manage traffic delays and impacts to traffic movements.
- Ensure road signage before and along Cox Peninsula Road to inform motorists of expected delays, road trains and include safe driving messages.
- Ongoing communication and engagement with stakeholders around blasting times, truck movements and traffic delays.
- When planning truck movements and blasting times, use traffic monitoring data to determine peak traffic times and take stakeholder feedback into consideration.
- Communicate the rationale for blasting times and road closures to affected stakeholders.
- Plan truck movements to minimise impacts to other road users and stakeholders.

- Plan blasting times to minimise impacts to other road users.
- Transport workers to and from site to minimise traffic.
- Fencing and security measures on site for security of explosives.
- Prepare an Emergency Management and Response Plan, use fire breaks to reduce the risk of bushfires and ensure workers on site have emergency response capabilities, road rescue capabilities and there are first aid facilities on site.
- Measures in place to enable emergency vehicles passage through road closure to access an emergency.

## 9. Health, wellbeing and safety

### 9.1 Overview

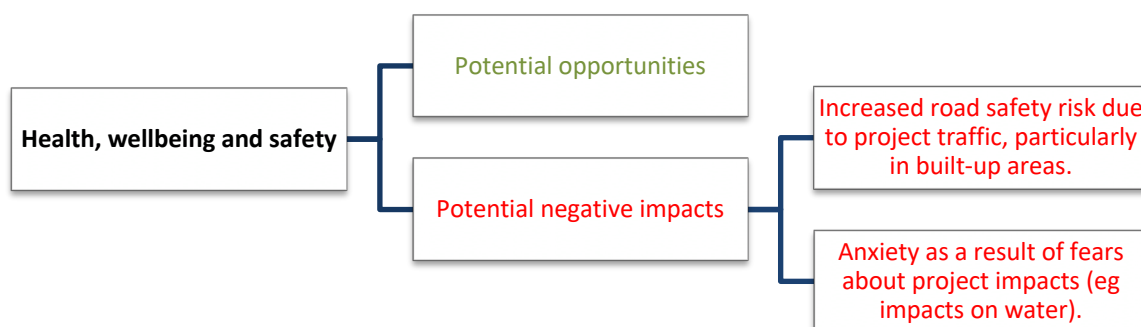
The predicted impacts of the project on health, wellbeing and safety are an increased road safety risk and anxiety as a result of fears about the project, specifically relating to water.

### 9.2 Key events or activities leading to impacts

Key activities that could influence health, wellbeing and safety risks:

- release of the EIS for public comment
- project traffic on local roads
- project start-up.

### 9.3 Key risks and opportunities



The potential opportunities and negative impacts on health, wellbeing and safety

### 9.4 Health

The (World Health Organisation, 2008) outlines 10 key determinants of health as being:

- **social gradient:** a person's social and economic circumstances
- **stressful economic and social circumstances** mean people are less likely to be healthy and have a long life
- **early years of life:** babies born with low birth weight have a much greater likelihood of developing coronary health disease in adulthood

- **social exclusion**
- **stress at work:** having little control over jobs, limited opportunities to use their skills or in high demand jobs with few rewards
- **unemployment, job and income insecurity** can lead to chronic stress
- **social support**
- **addiction:** misuse of alcohol, drugs and tobacco is harmful to health but is often a response to stressful situations and social breakdown
- **food security**, including good quality and affordable food
- **transport** is vitally important to accessing health and other services.

The NT Department of Health's 2016–17 Annual Report (Department of Health, 2017) states that the key issues and interventions in 2016–17 across the Northern Territory included immunisation programs, volatile substance abuse, infectious diseases, mosquito-borne infectious diseases, and environment and food safety.

## 9.5 Safety

The Litchfield Council 2017 Community Survey Report states that 85% of Litchfield council residents said they feel safe at home during the day, and more than 60% said they feel quite safe at home alone at night and walking alone during the day. Very few people reported feeling unsafe in the Litchfield Council area (Litchfield Council 2017).

## 9.6 Crime

The crime rates for the Palmerston region for the year to April 2018 show a total of more than 700 crimes against people and more than 3000 crimes against property. For the same period in Darwin, there were more than 2000 crimes against people and more than 7000 crimes against property (NTPFES, 2018). The crime rates for the area surrounding the project site include crime rates for a vast area across the Northern Territory, and would not be useful for this report.

## 9.7 Road toll

Road traffic incident data provided by the Northern Territory Department of Infrastructure, Planning and Logistics reports there were 33 traffic incidents including four fatalities on Cox Peninsula Road between the Stuart Highway and Fog Bay Road in the past five years from 2013 to 2017. Of these, 11 traffic incidents were in the Berry Springs area and four were in the Tumbling Waters area.

For the same period on the Stuart Highway from Cox Peninsula Road to Berrimah Road, there were 472 traffic incidents including 12 fatalities. The incidents are spread across the area however were more prevalent in Pinelands, Berrimah, Yarrowonga, Coolalinga and Knuckeyes Lagoon.

## 9.8 Assessment of health, wellbeing and safety risks and opportunities

### 9.8.1 Increased road safety risk due to project traffic, particularly in built-up areas

The project traffic during construction and operations increases the risk of road safety issues with industrial traffic sharing the road with pedestrians, commuters, tourists, fishermen, school buses and school traffic, cattle trucks and other motorists, particularly in built-up areas.

During the construction phase, there will be industrial traffic travelling along Cox Peninsula Road to and from the project site. During operations, project traffic will consist of a fleet of three quad road trains travelling up to a total of ten round trips from the mine site to Darwin Port each day. There will also be some workforce vehicles travelling along Stuart Highway and Cox Peninsula Road.

There are a number of road safety risk hotspots that were identified during research and stakeholder interviews. A key site is the Berry Springs Primary School on Cox Peninsula Road (see below), particularly at school drop-off and pick-up times, which are normally about 8.20 am and 2.30 pm to 3 pm Monday to Friday. Feedback from the school and the Northern Territory Department of Education is that there is usually a large influx of cars and people for about 15 minutes in the morning and the afternoon when quad road trains driving past the school would increase the risk of a traffic incident.



Road slowing bumps  
outside Berry Springs  
Primary School



Cox Peninsula Road  
outside Berry Springs  
Primary School



Cox Peninsula Road, Berry  
Springs

Cox Peninsula Road runs through the centre of Berry Springs township, which includes turn-offs to a shopping centre, petrol station, hotel and a number of houses. The road trains travelling the return trip each day through the centre of the town will increase risk to the safety of pedestrians and motorists in this area.

The Territory Wildlife Park is a popular attraction for tourists and locals. It is near Berry Springs and is accessed from Cox Peninsula Road (as shown in image below). There is no turning lane for vehicles travelling towards Berry Springs to the Territory Wildlife Park, which could create a potential traffic hazard particularly for tourist vehicles towing caravans turning into the site.



*The entrance to Territory Wildlife Park on the left, from Cox Peninsula Road*

School students use a school bus interchange on the corner of Cox Peninsula Road and Stuart Highway to change buses on their way to and from school. This interchange is well set back from the road reserves.

The intersection between the Stuart Highway and Girraween Road at Coolalinga is a known area for traffic accidents. The Inpex project 'park and ride' (which will remain in place until mid-2019), a school bus interchange, and access to Coolalinga Shopping Centre are all at this busy intersection. Although road trains frequently travel along the Stuart Highway and through this intersection, additional road train traffic may increase the road safety risk. The Northern Territory Government is aware of the existing road safety risk at this intersection and has announced that it will upgrade this section of the Stuart Highway to address safety, access and future growth.

During interviews, stakeholders such as Litchfield Council and the Department of Education, expressed concern about the increased road safety risk particularly for children around Berry Springs Primary School, for tourist traffic, particularly those with caravans, and for impatient fishermen overtaking road trains when it's unsafe.

There is also an increased risk of road safety if workers are drive-in, drive-out, due to additional traffic on the roads and potential fatigue after shift work. At peak employment, it is estimated that there would be 64 vehicles completing the return trip per day. Workforce traffic will be at shift changes, which will be early morning and late afternoon/evening. Core has indicated it will consider transporting workers to and from site by bus.

This risk (#9) is assessed as MODERATE. Mitigation measures reduce the consequence of this impact, reducing it from an initial assessment of HIGH.

### 9.8.2 Anxiety as a result of fears about project impacts (e.g. impacts on water)

Residents in the rural area and particularly Berry Springs are aware of the lack of available ground water in the area and may have concerns about the project's water source and use, and impacts on water, which may lead to anxiety if there is a lack of clear communication. Fears about risks to water are likely to be exacerbated due to the public scrutiny regarding water use and management in the Territory (see image).



*Groundwater Watch sign in Berry Springs*

Water availability has been identified as a key barrier to development on the Cox Peninsula for other potential projects.

There may also be concerns about risk to the surrounding environment, flora, fauna, landscapes, waste, industrial activity and concerns about the safety of the material being transported from site to port. Although there may be no cause for concern, ongoing communication with the community about these issues is important to ensure people understand the necessary detail and impacts of the project. These concerns can occur during the planning stage, construction, operations, closure and post-closure.

Numerous stakeholders asked about the project's water source and use during briefings and interviews and seemed satisfied when told the water would be sourced from Observation Hill Dam. Some stakeholders also raised questions about the post-mining impacts on the environment once the project is completed, specifically the impacts to downstream water courses if the project site and pit floods.

Ongoing open and transparent communication with the community will be essential to ensure there isn't a spread of misinformation and rumours that can result in anxiety. The detail of this would be included in a communication strategy for the project. It is recommended that Core establish a local



presence (through a local office or hotline) where people can easily access more information and ask questions about matters that concern them.

This risk (#10) was assessed as LOW due to the likelihood and consequence of it occurring.

## 9.9 Mitigation and management

These impacts will be addressed by:

- Mitigation measures to address road safety risk including:
  - a Traffic Management Plan
  - ongoing collaboration with Berry Springs Primary School, NT Police and the community on truck movements
  - implementation of speed restrictions through Berry Springs
  - a complaints hotline to report traffic breaches
  - an alert system to monitor truck speeds with consequences for breaches
  - workplace health and safety regulations to minimise risk of workers driving after long shifts or transporting workers by bus
  - regulating road train travel times (e.g. to avoid times when children are travelling to and from school) and limiting haul operations to daytime hours
  - timing shift changes to minimise increased traffic through Berry Springs during school peak periods.
- Ongoing open and transparent communication with the community.
- An Environmental Management Plan.
- A Mine Closure and Rehabilitation Plan.
- Establish a local presence through a local office or hotline.

## 10. Culture and heritage

### 10.1 Overview

Heritage and archaeological aspects of culture and heritage are covered in the separate Culture and Heritage report. However, cultural impact assessment covers both tangible cultural heritage, including natural features and landscapes, and intangible elements such as cultural practices, representations, expressions, knowledge and skills (World Bank, 2017).

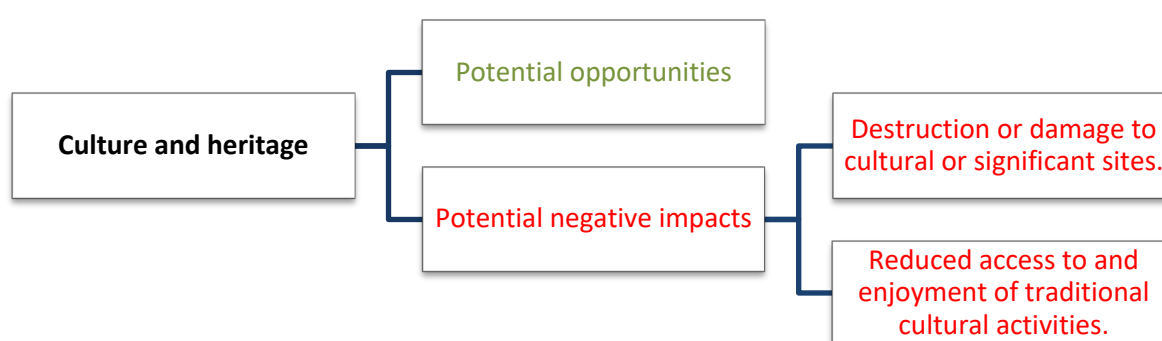
The key potential impact to culture would occur with the destruction of any culturally significant site, which would have implications for cultural and spiritual connections and potentially ceremony and the passing on of knowledge. Culture could also be impacted by any reduced access to and enjoyment of traditional cultural activities such as hunting, fishing, bush medicines or art as a result of biodiversity loss.

## 10.2 Key events or activities leading to impacts

Key activities that could impact on culture and heritage include:

- clearing new areas at the mine site
- unauthorised people accessing the mine site
- the presence of industrial activity in the region.

## 10.3 Key risks and opportunities



The potential opportunities and negative impacts on culture and heritage

## 10.4 Larrakia culture

The Larrakia are the Aboriginal Traditional Owners of Darwin as well as the Cox Peninsula, most of Gunn Point and rural Darwin and Darwin harbour. There are about 2000 Larrakia people in the Territory today and are made up of eight major family groups.

For more than a hundred years, the Larrakia people struggled to have their traditional land recognised. This was achieved in 2000 with the Cox Peninsula being handed back to the Larrakia traditional owners through the Kenbi Land Claim.

The Larrakia Nation Aboriginal Corporation was established in 1997 to represent the interests of the eight Larrakia families. It is a representative organisation for the Larrakia people and a major service provider for Aboriginal people in the region (Larrakia Nation, nd).

“The Larrakia had a vibrant traditional society based on our close relationship with the sea and trade with neighbouring groups such as the Tiwi, Wagait and Wulna. These groups shared ceremonies, songlines and intermarried.”

“Despite receiving no legal recognition of continued connection to country, the Larrakia people continue to care for our land and water. We continue to preserve our stories and culture, making sure they are passed on to the next generation.” (Larrakia Nation, nd).



## 10.5 Assessment of cultural risks and opportunities

### 10.5.1 Destruction or damage to cultural or significant sites

Advice from the NT Heritage Branch indicates there is a recorded Aboriginal archaeological site in the north-west corner of the mining lease. This site is protected under the NT's *Heritage Act* but is outside the disturbance footprint and will not be impacted by mining operations.

There are also two old tin mines located on the eastern side of the mining lease. The NT Heritage Branch advises these sites are not protected under the Act but do have some historic heritage value and should be avoided if possible.

Any destruction or damage to sacred sites or sites of special significance would cause distress to traditional owners and affect their cultural and spiritual connections to country.

This risk (#11) was initially assessed as MODERATE but with mitigation is reduced to LOW. The mitigation measures reduce the *likelihood* of destruction or damage to cultural sites occurring, while the *consequence* remains the same.

### 10.5.2 Reduced access to and enjoyment of traditional cultural activities

Larrakia people and Belyuen residents may enjoy traditional cultural activities near the site or downstream. The extent of the traditional activities in this area is unknown as the stakeholders who could provide this information (Belyuen Shire Council, Northern Land Council and Larrakia Nation) were not available to participate in the consultation.

This risk (#12) has not been assessed due to the key stakeholders being unavailable to provide the essential information required. The authors were not able to determine the current traditional activities undertaken in the area (if any) and could therefore not comment on the degree to which the project will reduce access for these activities.

It is recommended that Core's future stakeholder engagement include discussions with relevant Indigenous stakeholders to ensure any traditional cultural activities are not impacted by the mine.

## 10.6 Mitigation and management

Strategies to mitigate or manage cultural impacts include:

- The known heritage sites within the mining lease will be no-go areas.
- A Code of Conduct for workers and inductions will cover protection of heritage values.
- Any previously unrecorded archaeological sites encountered will be reported to the NT Heritage Branch for advice on how to respond. Procedures for unexpected heritage finds will be included in the Mine Management Plan.
- An Authority Certificate obtained from the AAPA.
- Environment Management Plan.
- Engage with relevant Indigenous stakeholders to ensure traditional activities in nearby areas is understood and are not impacted.

## 11.Environment

### 11.1 Overview

Most environmental matters are covered in other relevant chapters of the EIS. They are relevant to a consideration of socio-economic impacts given the socio-economic consequences of biophysical impacts, including the ability to enjoy natural surroundings. In general, these are considered to be of low consequence for this project, although good communication on water issues will be important.

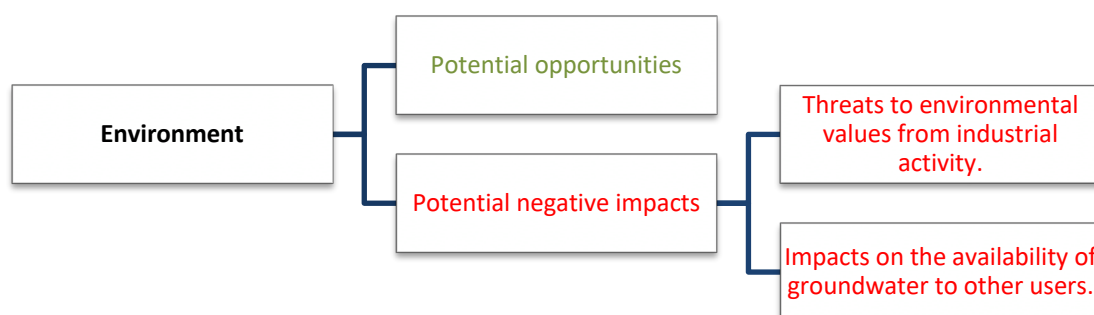
The project is relatively small compared with other mining projects in the region, however the environment on the Cox Peninsula is important to locals, including traditional owners, residents, fishermen and tourists and it is likely that people will want to protect the region from any negative environmental impacts.

### 11.2 Key events or activities leading to impacts

Key events or activities that could lead to impacts on the environment include:

- use of water during construction and operations
- clearing land for the project's infrastructure
- post-closure flooding of the pit.

### 11.3 Key risks and opportunities



The potential opportunities and negative impacts on the environment

### 11.4 Assessment of environmental risks

#### 11.4.1 Threats to environmental values from industrial activity

Many residents on Cox Peninsula have lived in the area for years and chose to live there because of the quiet, peaceful lifestyle, the surrounding bushland and natural environment. Stakeholder interviews revealed that some people in the area may be opposed to any industrial or mining activity in the region, viewing it as a threat to the area's natural values and beauty. Some community opposition to mining may also be a result of the legacy mines in the Northern Territory, which pose a risk to the environment and/or public safety.

The area is popular with tourists visiting Berry Springs, the Territory Wildlife Park and travelling through the region to Litchfield National Park, while locals frequent Dundee Beach, Crab Claw Island resort and numerous sites around the peninsula for camping, recreation and fishing.

As the traditional owners of the region, the Larrakia people not only value the natural environment in the region but their traditional and cultural connections to the land go beyond the tangible.

Perceived threats to environmental values could include management of waste rock, impacts to flora and fauna, management of erosion and weeds, rehabilitation methods, impacts to downstream water courses, contamination from spills or stormwater runoff.

West Arm is a popular fishing area and amateur fisherman may have concerns about potential impacts on the biodiversity and impacts to fishing downstream of the project.

There are temporary swimming holes in the wet season downstream from the project, and people may have concerns about the impacts to those. Modelling indicates the reduction in flow is not expected to impact on those waterholes.

As the area is undeveloped, any industrial development will be noticeable despite vegetation being maintained between the road and the mine site. Most people in the area will be passing through en route to other areas.

Some concerns that were raised in stakeholder interviews were the potential impacts on the biodiversity downstream, concerns that after the mine closes that the open pit will fill with water and flooding will release toxins into environment, and some people asked about the management of the waste, erosion and weeds and potential for contamination. People were also interested in Core's plans for rehabilitation and closure of the mine.

Although many people in the region support the project and are positive about the economic benefits, they will want to ensure the environmental values are protected.

The initial risk rating (#13) was MODERATE and the residual risk was assessed as LOW due to mitigation measures reducing the likelihood of this occurring.

#### **11.4.2 Impacts on the availability of groundwater to other users**

As was discussed in section 9.8.2 *Anxiety as a result of fears about project impacts (e.g. impacts on water)* the availability of groundwater is a key concern for people in Berry Springs and the surrounding rural area. There is a high level of awareness and concern in the Territory about the use of ground water for industrial purposes. The Berry Springs area is experiencing water shortages and restrictions and water availability has also been identified as a key barrier to development on the Cox Peninsula. One of the first questions many stakeholders asked during the stakeholder interview process was the source and amount of water the project will use.

The project's water requirements will be sourced from a combination of the existing Observation Hill Dam (the wall of which will be raised to increase capacity), a new small dam built on the mineral lease, capture and re-use of stormwater that falls on the mine site, re-use of groundwater that enters the pit and recycled water from processing activities.

This risk (#14) was initially assessed as MODERATE with a LOW residual rating.

### **11.5 Mitigation and management**

Measures to avoid, mitigate or manage these risks are:

- An Environmental Management Plan.
- A Water Management Plan.
- A Mine Closure and Rehabilitation Plan.
- Ongoing stakeholder and community engagement around the project's water use and impacts to water availability.

## 12. Human rights

### 12.1 Overview

There is a growing emphasis on consideration of human rights in impact assessments. While this project is considered unlikely to have a negative impact, it is worth considering potential breaches to ensure appropriate prevention methods are put in place.

### 12.2 Key events or activities leading to impacts

The following events could lead to impacts on human rights:

- project mobilisation
- workforce mobilisation.

### 12.3 Key risks and opportunities



The potential opportunities and negative impacts on human rights

### 12.4 Assessment of risks and opportunities

#### 12.4.1 Breaches of human rights

Breaches of human rights could be a result of racism, inequitable work practices, or breaches of labour laws. These issues should be managed with appropriate human resource management and strict codes of conduct for all workers.

The initial and residual ratings for this risk (#15) are LOW as it is assessed as unlikely to occur.

### 12.5 Mitigation and management

The following mitigation measures are recommended:

- A Human Resource Management Plan and consideration of potential human rights issues in human resource planning and practice.
- A Code of Conduct for workers that addresses any issues that could lead to breaches.
- Appropriate grievance procedures and remedies for workers to raise any concerns.
- Culturally-appropriate communication.

## 13. Cumulative

### 13.1 Overview

Cumulative impacts are those where multiple projects compound the economic and social risks and opportunities. Cumulative impacts may arise when multiple projects are operating in an area at the same time, creating competition for staff, compounding pressure on services and multiple and interacting pressures on the environment.

There are few industrial projects operating on the Cox Peninsula and there are no major projects in the Darwin region that would be competing for staff, infrastructure or services to a level that would negatively impact the region, particularly as the Inpex project construction phase will have come to an end.

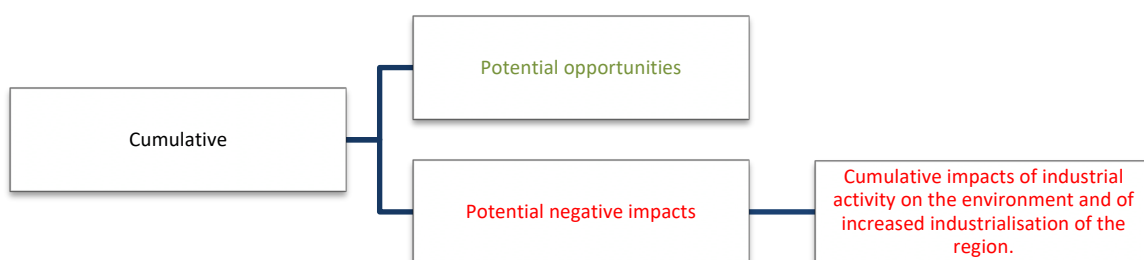
Given the current market demand and the geological profile of the area as prospective for lithium, this project may lead to further exploration and mining of lithium in the region. While this may result in cumulative impacts in the future, this assessment is based on current or planned projects.

### 13.2 Key events or activities leading to impacts

Key events or activities that may lead to cumulative impacts include:

- Development of new projects in the area
- Expansion of the existing project.

### 13.3 Key risks and opportunities



The potential negative cumulative impacts

## 13.4 Assessment of risks and opportunities

### 13.4.1 Cumulative impacts of industrial activity on the environment and of increased industrialisation of the region.

There is very limited industry on Cox Peninsula itself and as noted previously, as water is a limiting factor, it is unlikely that cumulative impacts of industrial activity will be felt in the area.

Where this project may compound social impacts is around concerns for protecting the environmental values of the region and the perception that this is another mining/industrial project that is increasing industrial activity and potentially impacting on water and biodiversity of the region.

The environmental contamination on the Cox Peninsula by the Commonwealth over more than a century, combined with the history of legacy mines in the Northern Territory could compound the social impacts of this project.

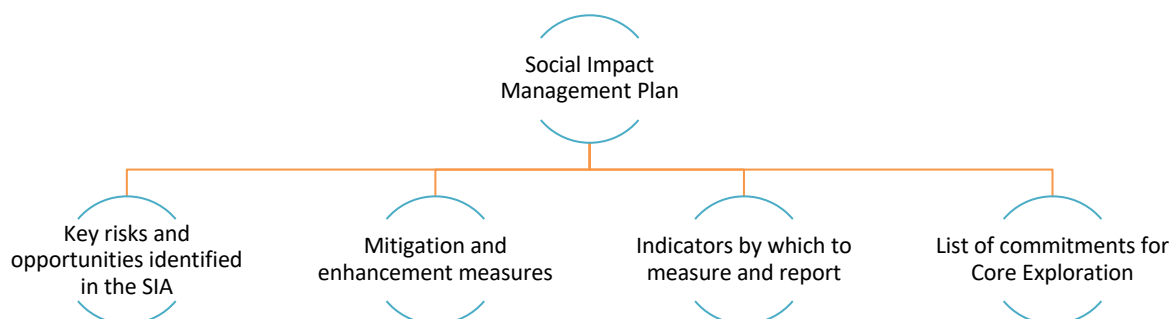
This risk (#16) was given an initial MODERATE rating and reduced to LOW with mitigation.

### 13.5 Mitigation and management

While Core will have little control over cumulative impacts of other projects, it can minimise the impacts of this project on the region with an Environmental Management Plan, Mine Closure Plan, and ongoing communication with the community.

## 13. Social Impact Management Plan

A Social Impact Management Plan has been prepared and will be submitted with this SIA. It outlines key risks and opportunities identified in the SIA, mitigation and enhancement measures, indicators by which to measure and report on identified and emerging issues and a list of Core commitments, including ongoing communication and engagement with the community.





## 15. Qualifications of the consultants

Senior Consultants from True North Strategic Communication, **Jo Madin** and **Claire Butler** prepared this Social Impact Assessment.

Jo Madin has a Bachelor of Applied Science (Town Planning) from the Royal Melbourne Institute of Technology and Certificate of Public Participation with the International Association for Public Participation (IAP2).

Jo has experience in planning, policy development and communication in both the private and public sectors. She has worked in Indigenous affairs, native title, mining, forestry, national parks and more recently in water, transport and infrastructure.

Claire has a Bachelor of International Business, Graduate Diploma of Management and Certificate of Public Participation with the International Association for Public Participation (IAP2).

Claire specialises in communication and community engagement and has worked on a number of resource, construction and community projects across the Northern Territory in the past 15 years.

Jo and Claire have completed Social Impact Assessment training conducted by Professor Frank Vanclay and Dr Ana Maria Esteves through the Centre for Social Responsibility in Mining at the University of Queensland.

Both Jo and Claire have also completed International Association for Public Participation (IAP2) training and our work is based on the IAP2 Core Values for public participation.

True North has recently been involved in a number of Social Impact Assessments for Northern Territory projects, including a number of major projects in Central Australia.

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