

## Section 17

### Social and Economic Matters







## 17 Social and Economic Matters

### 17.1 Introduction

Section 4.7 of the Tailored EIS Guidelines requires the following to be considered in relation to social and economic matters:

- identify and describe the following uses that exist in areas likely to be impacted by the action;
- assess any impacts on those users where the impacts are likely to be high, including:
  - a) social, cultural and heritage uses during each stage of the proposal;
  - b) current and projected commercial, recreational and scientific use, including any changes in visitation patterns;
  - c) commercial and recreational fishing; and,
  - d) traditional use activities.
- in relation to shipping activities, describe local and regional economic, social and built context, including historical and future trends in which the Project is proposed.

This section is structured to address these requirements as follows:

- **Section 17.2** provides an overview of the existing social and economic environment associated with the Project area and the shipping routes within Australian waters (focussing on the GBR). Future trends in shipping activities are discussed in **Section 10.3**;
- **Section 17.3** summarises the outcomes of the consultation process; and,
- **Section 17.4** identifies, describes and assesses the potential impacts of the Project (including Project-related shipping activities within Australian waters (focussing on the GBR)) on relevant uses and activities. Where relevant, this section also summarises issues that have been raised about the Project by stakeholders during consultation.

### 17.2 Social and Economic Context

The Project is located in the Western Cape region, which includes the Aurukun, Mapoon, Napranum and Weipa communities. Project-related bauxite shipping between the proposed Port and the Port of Gladstone would use the inner GBR Designated Shipping Area as would cargo deliveries for the Project from the east coast of Australia (predominantly Cairns) to Weipa. **Sections 17.2.1 to 17.2.7** provide details on the existing social and economic context of the Western Cape region. **Section 17.2.8** provides details on the existing social and economic context of the GBR.

#### 17.2.1 Existing Land Use

Lands within the Project area are not used for agriculture and are relatively undisturbed by development. The Project area is covered by a Mining Lease issued in 1958. Some cattle grazing and limited logging and sawmilling took place within the Project area in the early to mid 1900s but not since. There are no rural properties within the Project area. Tracks to various parts of the Project area are used by recreational vehicle users, Traditional Owners and for access for exploration. Exploration and Project investigation activities, including drilling and associated access road development, have taken place throughout the Project area and are on-going.

There is some use of the Project area by Traditional Owners and non-Indigenous people for hunting and fishing. Areas of cultural and recreational importance to Traditional Owners include Hey Point, Boyd Bay, Pera Head, Norman Creek, Amban (False Pera Head), Waterfall (near Ina Creek) and Six Ti-Tree.

## **17.2.2 Population and Demographics**

At the time of the 2011 Census, the total population of the four communities in the Western Cape region was 5,772 people, of which 50% were Indigenous. Weipa accounted for most of the region's population with 3,333 people (19% Indigenous), followed by Aurukun (1,294, 92% Indigenous), Napranum (857, 96% Indigenous) and Mapoon (288, 90% Indigenous). All four communities show a much higher proportion of Indigenous residents compared to the Queensland average of 3.6%.

The 2011 Census indicates that the most common family type in Weipa is couples with children, accounting for 51% of total family groups. The corresponding proportions for the other communities were 45% (Aurukun), 42% (Napranum) and 30% (Mapoon). Couples with no children comprised 37% of families in Weipa, 15% in Aurukun, 13% in Napranum and 30% in Mapoon. Single parent families accounted for 11% of all family households in Weipa, 38% in Aurukun, 38% in Napranum and 31% in Mapoon.

Weipa has a large proportion of residents, of both sexes, in the 25 to 54 age range, consistent with the age profile of the mining workforce. Weipa has relatively fewer persons aged between 15 and 24 compared to the older and younger age cohorts. This is most likely the result of high school-aged students attending boarding schools and young adults moving to larger centres for tertiary education and employment in non-mining occupations.

## **17.2.3 Employment and Economic Profile**

The economy and employment opportunities in the Western Cape region are dominated by the existing RTA mining operations north of the Embley River. The local economy and employment opportunities are also supported by businesses associated with the existing RTA mining operations, the cattle industry, commercial fishing and tourism. Recreational fishing is the major component of the tourism sector.

### **17.2.3.1 Employment**

Weipa has the region's highest labour force participation rate of 79%, followed by Mapoon (66%), Napranum (48%), and Aurukun (47%). The labour force participation rate refers to the number of people who are either employed or actively seeking work, as a percentage of the total population aged 15 years and over, and includes those on Community Development Employment Projects (CDEP) as employed persons (as counted by the ABS). In 2006, 21% of Indigenous employment present in Weipa was directly attributable to CDEP, which is low when compared to the other Western Cape communities with 81% in Aurukun, 71% in Napranum and 66% in Mapoon.

Private sector employment is relatively high in Weipa for both Indigenous and non-Indigenous people in comparison to that of the other communities, where government employment is dominant. Weipa's high proportion of Indigenous and non-Indigenous private sector employment is largely attributable to employees and contractors engaged with RTA's operations. Based on 2006 Census data, Mining and Mineral Product Manufacturing accounts for 43% of jobs in Weipa, followed by Education and Training (9%), Public Administration and Safety (9%), Healthcare and Social Assistance (6%) and Retail Trade (6%). There is no data available for Aurukun, Napranum and Mapoon.

In 2011, 25% of RTA's employees were Indigenous, 17% from the local areas and 8% from outside the local area.

### **17.2.3.2 Industry**

As with employment, mining and businesses supporting mining dominate the economy of the Western Cape. The local businesses supporting mining include equipment maintenance and repair, building and civil works, and local suppliers of other goods and services. The fishing, tourism and cattle industries are the next largest industries in the Western Cape.

The cattle industry on Cape York is characterised low carrying capacity and low productivity. A number of properties have been destocked over the past decade and gazetted as National Parks. The Port of Weipa provides a live cattle export facility at Humbug wharf. However, there are numerous constraints on the viability of live cattle exports, the main one being that Cape York producers do not generally sell cattle in quantities sufficient to fill a livestock transport ship and hence make an economically viable shipment. There has not been an export shipment for two years.

The Gulf of Carpentaria hosts a number of commercial fisheries including Northern Prawn Fishery (NPF), the Inshore Finfish Fishery and the Commercial Line Fishery.

The NPF fishing area extends across the northern part of Australia from Cape Londonderry (Western Australia) east to Cape York. In practice, fishing is focussed on a number of "hotspots", although the relative importance of these hotspots varies between years in response to climatic factors, in particular rainfall. The annual value of production from the NPF was \$94.9 million in 2010-2011 (DAFF 2012). In 2011 there were 54 boats with rights to access the fishery (DAFF 2012).

The Gulf of Carpentaria Inshore Finfish Fishery is a commercial mesh net fishery that extends from the Queensland – Northern Territory border to Slade Point on the north-west coast of Cape York Peninsula. It has an inshore component (0–7 nautical miles). In 2010, 78 licensed fishers harvested 2,567t of fish with a landed gross value of production of \$15.3 million. The rivers flowing into Albatross Bay are closed to the fishery, although the foreshores and sub-tidal areas can be accessed.

The Gulf of Carpentaria Commercial Line Fishery extends from the Queensland – Northern Territory border to Slade Point on the north-west coast of Cape York Peninsula. In 2010, 24 licensed fishers harvested 185t of fish with a landed gross value of production of \$1.3 million. The charter (commercial tour operator) sector also uses this fishery and 14 charter operators were active in 2010.

Up to 30,000 tourists visit Weipa each year. Most tourists who visit the Western Cape region do so primarily to take part in camping and recreational fishing activities. Tourism providers offer services in beach, deep-water and estuary charter fishing, camping and bird watching. Visitors to Weipa generally stay for greater than three days.

### **17.2.4 Infrastructure and Services**

RTA is responsible for the administration of Weipa, which it does through the Weipa Town Authority (WTA). The WTA acts in the role of a Local Authority and manages services such as road maintenance, water supply, town planning, public swimming pool, public library, parks and ovals and garbage collection. Approximately \$52 million has been spent by RTA over the past five years on town maintenance, infrastructure upgrades (including airport, landfill and sewerage), expanded Cape Kids Child Care Centre, and residential land development.

The electricity supply to Weipa and Napranum and existing RTA operations is provided by a power station built and operated by RTA.

Drinking water in Weipa is sourced from a series of shallow aquifer bores operated by RTA. The water is chlorine dosed in an elevated reservoir and gravity fed to dwellings via a system maintained by WTA.

Weipa is serviced by sewage treatment plants at Awonga Point and Lorim Point. The garbage collection service for Weipa is provided by the WTA through an external contractor.

The Peninsula Development Road is the only road link from Weipa to other areas of Far North Queensland. The distance from Weipa to Cairns is approximately 800km. RTA maintains the road within ML7024.

Air passenger transport to and from Weipa is available through QantasLink services. QantasLink operates up to three daily flights from Cairns. Skytrans operates air passenger services to Aurukun from Cairns. In addition to Skytrans there are also a number of private air charter companies based in Cairns and Weipa who provide charters between Weipa, Mapoon, Aurukun and the Northern Peninsula Area.

The Port of Weipa is managed by NOBP. Bauxite product from the existing RTA operations is loaded onto bulk carriers at Lorim Point in the Embley River. Wharves at Humbug Point handle general cargo and heavy equipment, and wharves at Evans Landing are used for petroleum products, naval purposes and commercial fishing activities.

#### **17.2.5 Educational Facilities and Services**

The Western Cape College (WCC) is the main education service provider in the Western Cape region. The WCC Weipa Campus is the largest P-12 school in the Cape with a current enrolment of 890 students. Napranum students attend the WCC. In 2012, the WCC, in partnership with the Indigenous Land Corporation, opened a 120 bed residential facility located in Weipa. Approximately 53% of Weipa campus students are Indigenous. The Mapoon campus provides education from Pre-Prep to Year 6, and currently has an enrolment base of 38. The Aurukun campus offers classes from Years 1 – 10 and has an enrolment of about 210.

#### **17.2.6 Health and Emergency Services**

The Western Cape region is serviced by Queensland Health through the new Weipa Hospital which provides a 14 bed inpatient service, 10 residential aged care beds, primary health care, dental, physiotherapy, and District Office administration. Primary health care centres are located in Aurukun, Napranum and Mapoon. In addition the communities across the region are serviced through a number of other service providers, various outreach primary health care teams, and Home and Community Care.

An ambulance service is provided through the Weipa Integrated Health Services to the Weipa local area, including Napranum and is on call 24 hours a day, seven days a week. There are State Emergency Service units in Weipa and Aurukun. The Weipa unit services Napranum and Mapoon.

The Royal Flying Doctor Service aircraft are able to land at airstrips located at Aurukun, Weipa and Mapoon in the case of emergencies.

RTA's Weipa fire and rescue services team comprises ten fire and rescue officers and a fire and rescue crew leader. Fire and rescue officers are based at both Lorim Point and Andoom stations. The stations are manned 24 hours a day, seven days a week. RTA's Weipa operations maintain, and implement as required, a detailed Business Resilience and Recovery (BRR) Plan (otherwise known as an "Emergency Management Plan").

Alcohol Management Plans (AMPs), a Queensland Government initiative, are currently implemented across a number of Cape York communities, including Aurukun, Napranum and Mapoon. AMPs contain a set of recommendations on reducing alcohol related crime and violence via restrictions in the sale



and consumption of alcohol. The regulations apply to all people in the restricted area, whether they are a resident, visitor or tourist passing through. Weipa does not have an AMP which, at times, has resulted in people from neighbouring communities driving to Weipa to purchase and consume alcohol.

A community wellbeing centre that provides drug and alcohol, family violence, gambling and general counselling support has operated in Aurukun since December 2008. The Aurukun Well-Being Centre is designed to improve the availability of health services. It provides a community-based approach to treating addiction and related mental health issues, addressing family violence, reinforcing social norms and facilitating pathways out of treatment to employment and education. The services offered by the Well-Being Centre include assessments, counselling, support, case co-ordination and referrals to other services.

### 17.2.7 Housing

There are about 1163 dwellings in Weipa (2011 census). RTA owns 237 of these dwellings, with the remainder owned privately and by Government agencies. Private ownership has increased in recent years as RTA has sold houses to its employees. House prices in Weipa are currently comparable to those in the Cairns Local Government Area. In December 2012, Weipa Real Estate listed 31 houses and units or duplexes/triplexes for sale.

The RTA workforce lives locally in predominantly privately owned homes and two single person villages located at Rocky Point (140) and Evans Landing (200).

### 17.2.8 Project-related Shipping

Existing and projected or future trends in shipping activities are described in **Section 10.3**. Project-related shipping routes are described in **Section 3.9.3**. The following sections provide an overview of the existing social and economic environment associated with the Project-related shipping routes within Australian waters.

#### 17.2.8.1 Great Barrier Reef (GBR)

The GBR covers approximately 34,870,000ha from Cape York in the north to past Lady Elliott Island in the south (DSEWPac 2012c). A Marine Park was declared over large parts of the GBR in 1975 under the *Great Barrier Reef Marine Park Act 1975*. The GBR was inscribed on the World Heritage List in 1981 and was also listed on the National Heritage List in 2007. GBRMPA is responsible for managing the GBRMP.

The GBR is an international hub of tropical marine ecosystem research (GBRMPA 2009b). There are presently six research stations located throughout the GBR.

Commercial marine tourism is a large direct contributor to economic activity in the GBR. The GBR supports 10 commercial fisheries and is a popular recreational fishery.

The following federal and State government organisations are responsible for responding to major incidents and marine emergencies, such as chemical and oil spills on the GBR:

- AMSA: this federal organisation is responsible for managing shipping activities throughout the GBR. It is responsible for coordinating responses to marine emergencies and incidents;
- Australian Maritime Systems and Swire Pacific Offshore operate a dedicated fleet of emergency towage vessels with appropriately trained crews in order to provide emergency response to shipping incidents within the GBR (AMSA 2012c);
- MSQ, a division of TMR, is the lead response agency for oil and chemical spills within the GBR; and,
- Queensland Water Police.

In addition, GBRMPA, the Commonwealth Department of Infrastructure and Transport and the Queensland Government are key stakeholders in the planning and prevention of shipping incidents and other less severe impacts, such as the introduction of invasive marine pests and anti-fouling paints, waste disposal, and anchor damage within the GBR (GBRMPA 2009b).

#### *17.2.8.2 Torres Strait Route*

Torres Strait lies between the tip of Cape York and PNG. Many of the islands in the strait are inhabited by the Torres Strait people. It is a vital economic link being the only shipping route between the Arafura and Coral Seas. Vessels bound from many major Asian ports for eastern Australia, PNG, and New Zealand pass through the strait.

The Torres Strait supports commercial fisheries for prawns, mackerel, and tropical rock lobster.

AMSA is responsible for managing shipping activities through the Torres Strait and Australian Maritime Systems and Swire Pacific Offshore operate a dedicated fleet of emergency towage vessels with appropriately trained crews in order to provide emergency response to shipping incidents within the Torres Strait (AMSA 2012c). MSQ also maintains oil spill equipment at Thursday Island to respond to and spill emergencies and the Queensland Water Police may be utilised in response to a shipping related incident.

#### *17.2.8.3 Commonwealth Marine Areas (CMA)*

The domestic bauxite shipping route traverses the CMA almost parallel to the western side of Cape York Peninsula, along the same route it has followed for over 40 years. Domestic bauxite shipping would enter/exit the CMA near Torres Strait and re-enter/exit the CMA within the Designated Shipping Area of the GBRMP. The shipping route for ship carrying bauxite through the GBRMP would traverse in and out of the CMA at various locations between the Port of Cairns and Port of Gladstone, where it would exit the CMA. Therefore for the purposes of this social and economic assessment, the CMA is incorporated into the assessment on the GBR and Torres Strait.



### 17.3 Consultation

Extensive engagement has been undertaken since 2008 to identify issues and potential impacts of concern to stakeholders relating to the Project. The consultation process and outcomes are described in **Section 3.14** and **Appendices 3-A, 3-B, 3-C and 3-D**. A social impact assessment was also carried out as part of the Queensland EIS process (refer to Section 16 of the Queensland EIS (RTA 2011)).

Based on outcomes of consultation and the social impact assessment, a draft Social Impact Management Plan (SIMP) was released in February 2012 as part of the Queensland Supplementary EIS (RTA 2012). The SIMP would be adapted to changing circumstances through the life of the Project under the direction of a Steering Committee comprising representatives from RTA, Traditional Owners, the chamber of commerce, local governments, and the Queensland government. The implementation of the SIMP is a condition of Project approval set by the Queensland Coordinator General (Queensland Government 2012).

Within the SIMP, responses to the main issues have been grouped into Action Plans to enable a focused and holistic approach to implementation. Based on the feedback received from stakeholders, more than half the Action Plans focus on employment outcomes or improving access to employment, primarily for Indigenous people. Many of the programmes would be implemented via collaborative efforts with key stakeholders and utilise existing engagement groups and partnerships.

The Action Plans are:

- Community commute – Aurukun to the SoE mine site;
- Communities, Heritage and Environment Management Plan;
- Land and sea management;
- Indigenous employment and training;
- Indigenous education;
- Local and Indigenous sourcing;
- Housing and accommodation; and,
- Community health and wellbeing.

The Action Plans detail the impacts, performance goals, responsible parties, actions and performance indicators and implementation timeframes and are presented in the Queensland Supplementary EIS (RTA 2012). The SIMP Steering Committee shall monitor progress in implementation of actions.

## 17.4 Social and Economic Impact

The *Great Barrier Reef Outlook Report* (Outlook Report (GBRMPA 2009b)) has rated the impacts of direct use on the environmental, economic and social values of the GBR. This assessment considers these areas jointly, as the social values of the GBR are intimately connected to its environmental and economic value. **Table 17-1** summarises the overall impact rating from the Outlook Report for direct use activities on the GBR for each value, and provides a statement and rating associated with the impact on social values as a whole.

**Table 17-1 Outlook Report – Direct Use Impacts on Values**

Value	Summary	Grade
Environmental	Direct use is impacting some species groups and ecological processes including fish population, predation and herbivory. Some species of conservation concern continue to be impacted.	Low impact
Economic	Direct use directly contributes to the economic value of the GBR, mainly derived from its natural resources.	Very low impact
Social	Direct use of the GBR provides strong social benefits to regional communities and Traditional Owners. Future increasing use may diminish these benefits.	Low impact
Impact on Social Values – all	An increasing coastal population is likely to increase recreational use of the GBR and change people's experience of the GBR with increased congestion at popular recreation locations and competition for preferred sites. A decline in inshore habitats as a result of polluted water would have social implications for dependent industries and coastal communities. Traditional Owners are concerned about rising temperatures altering the seasonality and availability of marine resources as well as the potential loss of totemic species.	Low impact

Source: GBRMPA (2009b)

Project-related shipping through the GBR would constitute as a "direct use" of the GBR. The overall impact on social values (including economic values) of the GBR by direct use has been assessed as "low" (GBRMPA 2009b).

Section 4.7 of Tailored EIS Guidelines requires impacts on users to be assessed if the impacts are likely to be high. As demonstrated in **Table 17-1**, impacts on uses associated with Project-related shipping activities within the GBR would be low. It is also considered that other Project-related impacts on uses within the Project area would not be high. Nevertheless, the potential impact of the Project on the following uses and activities in the Western Cape region have been assessed (refer **Sections 17.4.1 to 17.4.8**):

- cattle industry;
- commercial and recreational fishing;
- other businesses;
- housing, infrastructure and services;
- tourism;
- scientific use; and,
- traditional use activities (including cultural heritage).

The potential impact of the Project on the following uses and activities in the GBR have been assessed (refer **Sections 17.4.3, 17.4.6, 17.4.7 and 17.4.8**):

- commercial and recreational fishing;
- tourism;
- scientific use; and,
- traditional use activities.

### 17.4.1 Economic Modelling

The likely economic impacts arising from the construction and operation of the Project have been estimated using an input-output model. Full details of the model are presented in **Appendix 17-A**. The model estimates the total economic contribution to the local, FNQ, Queensland and Australian economies (in 2012 dollars). The results of the modelling for the various phases of the Project are:

- Construction Phase (22.5Mdtpa production capacity)
  - Estimated direct employment averages approximately 950 people;
  - Indirect employment of approximately 632 people in the local area, 993 people in FNQ, 1,712 people state-wide and 2,286 people nationally;
  - Direct financial contribution of \$264 million locally, \$527.9 million in FNQ, \$989.9 million in Queensland and \$1,319.8 million nationally; and,
  - Indirect financial contribution of \$167.6 million locally, \$522.0 million in FNQ, \$1,633.5 million in Queensland and \$2,977.4 million nationally.
- Operations Phase – 22.5Mdtpa production scenario
  - Direct employment (including contractors) of approximately 552 people in local region;
  - Indirect employment of approximately 615 people locally, 964 people in FNQ, 2,008 people state-wide and 3,104 people nationally;
  - Direct annual financial contribution of \$675 million across the local, regional, Queensland and national economies; and,
  - Indirect annual financial contribution of \$194 million locally, \$292 million in FNQ, \$584 million in Queensland and \$920 million nationally.
- Operations Phase – 50Mdtpa production scenario
  - Direct employment (including contractors) of approximately 1,346 people in local region;
  - Indirect employment of approximately 1,409 people locally, 2,193 people in FNQ, 4,532 people state-wide and 6,788 people nationally;
  - Direct annual financial contribution of \$1,500 million across the local, regional, Queensland and national economies; and,
  - Indirect annual financial contribution of \$451 million locally, \$673 million in FNQ, \$1,326 million in Queensland and \$2,020 million nationally.

The modelling shows the Project would have a significant positive impact on the local, FNQ, Queensland, Queensland and Australian economies during construction and operations. The SIMP contains a Local and Indigenous Sourcing Action Plan designed to maximise opportunities for local Indigenous and non-Indigenous business to develop and to participate in the Project (refer to Appendix 6 of RTA (2012)).

## 17.4.2 Cattle Industry

Some cattle grazing took place within the Project area in the early to mid-1900s but that has been discontinued. No cattle properties about the Project area and the homesteads of the nearest properties (Watson River, York Downs (formerly called Sudley), Merluna) are over 50km to the east.

During construction there would be an increase in heavy vehicle traffic carrying aggregate along the PDR and Aurukun Road (the roads used by the nearest cattle properties). The Queensland Coordinator General requires RTA to prepare a road use management plan for the Peninsular Development Road and Aurukun Road for each phase of the Project in consultation with TMR (Queensland Government 2012). The road use management plan will identify sources of water that would be utilised for the road as required and in consultation with TMR. During periods of significant traffic, RTA must monitor condition of the roads and repair any Project-related damage.

The proposed Humbug barge terminal has been designed so that it would not interfere with adjacent existing live cattle export facility.

The Project is not expected to result in a change to the cattle industry on the Western Cape.

## 17.4.3 Commercial and Recreational Fishing

### 17.4.3.1 Northern Prawn Fishery (NPF)

The main species caught in the NPF are tiger prawns and banana prawns, targeted at different times and generally in different locations. For catch and effort reporting purposes the NPF is divided into 15 statistical areas. The proposed Port development area is within the Weipa statistical area, which extends from approximately Port Musgrave southwards to Thud Point. Tiger prawn fishing takes place in the Western Gulf of Carpentaria from August to November, with little catch recorded in the Weipa statistical area or in the Eastern Gulf of Carpentaria in general. The banana prawn season extends from April to June, with the Weipa statistical area being a significant area of production. Banana prawns are targeted in waters less than 20m deep. Areas adjacent to the proposed Port site between Pera Head and Boyd Point and the proposed new spoil ground location are important areas within the Weipa statistical area for catching banana prawns.

The area of the proposed new spoil ground (3km<sup>2</sup>) represents much less than 0.02% of the NPF Weipa Statistical Area (20,990km<sup>2</sup>). Total prawn catch data (all species) for the whole NPF, the NPF Weipa Statistical Area and a local 6 x 6 nautical mile grid centred on the proposed new spoil ground are presented in **Table 17-2**.

**Table 17-2 Total Prawn Catch**

Year	Total NPF Catch (t)	Weipa Statistical Area (t)	Weipa as % of Total NPF	Local Grid (36nm <sup>2</sup> ) (t)	Local Grid as % of Total NPF
2006	5563	399	7.2%	no data	no data
2007	4317	231	5.4%	no data	no data
2008	6962	883	12.7%	13	0.2%
2009	7479	560	7.5%	56	0.7%
2010	7596	349	4.6%	8	0.1%
<b>Mean</b>	<b>6383</b>	<b>484</b>	<b>7.6%</b>	<b>26</b>	<b>0.4%</b>

Source: Australian Fisheries Management Authority



Catch in the 36nm<sup>2</sup> local grid averages 0.4% (26t) of the total annual NPF catch. The area of the proposed new spoil ground would represent about 5% of the local grid and hence any reduction of catch due to disturbance to trawl habitat, were it to occur, would be of the order of 0.02% (1.3t) of the average annual NPF catch of 6,383t. In conclusion, the Project would have a negligible impact on the NPF and a negligible impact on licensed operators.

#### *17.4.3.2 Gulf Commercial Line and Net Fishing*

Production of the key target species in the inshore and offshore fishery components is reliant on intact and functioning inshore habitats such as mangroves and seagrass and the connectivity between habitats. There is a closed season between November and February to protect the spawning stock of key target species. On average, reporting grid AB8 contributes approximately 3% of the total annual catch of the Gulf of Carpentaria Inshore Finfish Fishery.

The Gulf of Carpentaria Commercial Line Fishery is managed by the Queensland Government and extends from the Queensland – Northern Territory border to Slade Point on the north-west coast of Cape York Peninsula. In 2006, 27 licensed fishers harvested 237t of fish with a landed gross value of production of \$1.6 million.

The main target species is Spanish mackerel, which constitutes 90% of the total catch. On average, reporting grid AB8 contributes approximately 12% of the total annual catch of the Gulf of Carpentaria Commercial Line Fishery.

The net component of the Gulf of Carpentaria Inshore Fin Fish Fishery includes the commercial inshore net fishery (N3, out to 7 nautical miles), commercial offshore net fishery (N9, 7 to 25 nautical miles) and commercial bait netting. The Gulf of Carpentaria Line Fishery (L4) covers the eastern half of the Gulf of Carpentaria and is a multi-species fishery which harvests a variety of pelagic and demersal fish. Commercial line fishermen recognise the reef areas in the vicinity of Pera Head, Boyd Point and Thud Point as key locations for Spanish mackerel (*Scomberomorus commerson*) in the Weipa region. The peak season for Spanish mackerel in the Weipa region extends from August to November. The charter (commercial tour operator) sector also uses this fishery.

DAFF provides catch data for 30 x 30 nautical mile grids where there are five or more boats working. Catch data for 6 x 6 nautical mile “sites” is also available where there are five or more boats working. However, there are often less than five boats working a “site” or a grid and without such data it is difficult to gain a full understanding of temporal and spatial variation in catches. The proposed jetty and berths for the Port are in AB8 (site 22), the channel is in AB8 (site 21), and the proposed new spoil ground is in AC8 (site 25). AB9 and AC9 are adjacent grids. Catch data for the period 2005 to 2009 is presented in **Table 17-3**.

The footprint of dredging for the proposed Port (berths and channel) is approximately 2km<sup>2</sup> and the footprint of the proposed new spoil ground is approximately 3km<sup>2</sup>. If it were assumed that there was a long term impact on catch rate proportional to the area of seabed affected by the Project footprint then the average impact on annual Gross Value of Production would be less than \$197 for the N3/N9 fishery and less than \$206 for the L4 fishery. However, catch rates between “sites” within the AB8 and AC8 grids would vary considerably due to the presence or absence of varied benthic habitats, including inshore reefs. Based on the above assumptions about impact and a channel footprint of 1km<sup>2</sup>, the average impact on annual Gross Production Value for the L4 fishery within AB-21 would be \$396. There would be variation in catches throughout the 6nm x 6nm AB8-21 “site” and the estimate of \$396 per annum represents an average value only.

**Table 17-3 Gulf Commercial Net, Line and Charter Catch Data 2005-2009**

<b>Fishery</b>	<b>Grid*</b>	<b>Total Catch 2005-2009 (t)</b>	<b>Catch as % of Total</b>	<b>Gross Production Value 2005- 2009 (\$)</b>	<b>Gross Value as % of Total</b>	<b>Gross Value/km<sup>2</sup>/ year (\$)</b>
<b>Net (N3/ N9)</b>	All of Gulf	10,058	100%	\$60,295,507	100%	
	AB8	87	0.9%	\$541,325	0.9%	\$33
	AB8-21	no data				
	AB8-22	no data				
	AB9	332	3.3%	\$2,099,287	3.5%	\$136
	AC8	146	1.5%	\$652,781	1.1%	\$42
	AC8-25	no data				
	AC9	295	2.9%	\$1,606,945	2.7%	\$104
<b>Line (L4)</b>	All of Gulf	2,110	100%	\$11,635,036	100%	
	AB8	114.6	5.4%	\$799,926	6.9%	\$52
	AB8-21	35.0	1.7%	\$244,788	2.1%	\$396
	AB8-22	no data				
	AB9	8.6	0.4%	\$60,380	0.5%	\$4
	AC8	80.1	3.8%	\$527,678	4.5%	\$34
	AC8-25	no data				
	AC9	53.8	2.5%	\$357,383	3.1%	\$23
<b>Commercial Charter</b>	All of Gulf	729	100%	not applicable		
	AB8	72.7	9.9%			
	AB8-21	6.5	0.9%			
	AB8-22	11.2	1.5%			
	AB9	no data				
	AC8	no data				
	AC9	no data				

Source: DAFF database

\* Individual grids are 30 x 30 nautical miles, proposed jetty and berths in AB8 (site 22), channel in AB8 (site 21), proposed spoil ground in AC8 (site 25).

During the Queensland EIS consultation process, the Gulf of Carpentaria Commercial Fishermen's Association and the Queensland Seafood Industry Association expressed concern that disturbance due to the proposed Port development would lead to displacement of fishing effort and loss of income (a summary of submissions are contained in Appendix 1 EIS Submissions of RTA (2012)).

A compensation model for commercial fishing operations has been developed by DAFF to determine the level of compensation which might apply to fishing operators affected by projects in Queensland's marine environment. The model addresses two aspects:

- compensation for lost income in the area impacted (fishers who traditionally fish the affected area); and,

- effort displacement (fishers who traditionally fish adjacent areas and would be subject to increased competition).

With regard to the SoE Project, modelling undertaken by DAFF indicated that a total compensation amount of approximately \$242,000 would be reasonable in the case of commercial fishery impacts arising from the Project (Queensland Government 2012). RTA has subsequently agreed to pay this amount and for the Queensland Rural Adjustment Authority (QRAA) to administer compensation to relevant fishers and to buyout an appropriate level of fishing effort. The Queensland Coordinator General has supported this approach to determining a settlement and accepted that “the compensation model developed by DAFF for commercial fishing impacts provides a fair, reasonable, scientific and defensible basis for determining a compensation amount of \$242,000” (Queensland Government 2012).

RTA would designate a safe passage underneath the proposed jetty (in accordance with any Maritime Safety Queensland requirements) for boats that can safely navigate under the jetty in order to avoid the need to travel around the wharf. The jetty infrastructure would be approximately 18m above LAT and the pile spacing would be more than 20m apart.

#### *17.4.3.3 Gulf Charter and Recreational Fishing*

Recreational fishing is a popular pastime in Western Cape waters and a range of species including barramundi, mangrove jack, fingermark, threadfins and mackerel are caught (Baker and Sheppard 2006). It is estimated that 90% of tourists who visit Weipa do so primarily to fish (GHD 2005). There is no information available from DAFF on the recreational catch and the distribution of recreational fishing effort in the Project area.

Guided fishing supports recreational fishing tourism and attracts tourists to Weipa. The charter fishing businesses based at Weipa principally fish at the reefs in Albatross Bay, Pera Head and Thud Point, the rivers and creeks that drain into Albatross Bay, and the sandflats that extend from the Embley River south to Norman Creek.

The Gross Production Value measure is not applicable to the charter operators as the catch is not sold. The gross revenue of the Weipa-based charter operators in 2006 was estimated to be \$2,386,000, assuming 87.5% average hire rate over 30 weeks for 14 charter boats, 3 mother ships and 2 houseboats (Barradave Sportfishing Services 2011).

DAFF have catch data for AB8-21 (see **Table 17-3**), which includes the proposed channel and largely covers the area known as the “Three Mile” (an area of scattered rubble substrate which is an important fishing area for charter operators and recreational anglers) and AB8-21 (encompassing the proposed shipping channel). These two 6nm x 6nm “sites” contributed approximately 25% of the total charter catch in grid AB8 and 2.4% of the total Gulf catch (refer **Table 17-3**). There is no data for the AC8 grid encompassing the Nine Mile reef.

During the Queensland EIS consultation process, private recreational and sport fishing charter operators expressed concern that disturbance due to the proposed Port development would:

- adversely affect important fishing charter spots such as the “Three Mile” and the Nine Mile reef;
- restrict access to preferred fishing spots; and,
- lead to economic loss for charter operators.

Some submissions requested that measures be taken to offset impacts by monetary compensation and measures such as the establishment of artificial reefs (submissions are contained in Appendix 1 EIS Submissions of RTA (2012)).

RTA shall implement the following measures to minimise potential impacts on charter operators and recreational fishers:

- re-align the jetty and main access channel by two degrees south to avoid most of the “Three Mile” fishing area;
- designate a safe passage underneath the proposed jetty for boats that can safely navigate under the jetty to prevent the need to travel around the jetty (subject to MSQ requirements) (the jetty infrastructure would be approximately 18m above LAT and the pile spacing's would be more than 20m apart);
- support the establishment of a local recreational fishing reference group to provide a forum to develop and help implement the establishment of a communities fisheries project (which may take the form of new or upgraded infrastructure or studies or management measure). The reference group would comprise representatives from charter operators and the Weipa Sportsfishing Club and would operate by consensus; and,
- provide funding and/or works up to the value of \$242,000 for the above agreed communities fisheries project.

The Queensland Coordinator General has stated “I accept that the project will have both positive impacts through enhanced fish habitat provided by jetty and wharf piles as well as negative impacts through access restrictions” and “I support the commitment given by RTAW to establish a local recreational fishing reference group to identify a suitable community fisheries project and to commit funding to the project to the level of \$242,000” (Queensland Government 2012).

#### *17.4.3.4 Torres Strait*

The Torres Strait fishery is managed by DAFF under the Protected Zone Joint Authority in the Australian area of the Torres Strait Protected Zone and designated adjacent Torres Strait waters.

Traditionally, Torres Strait Islanders have always taken a wide range of marine species for subsistence and cultural uses. Among the species they take are tropical rock lobster, Dugong, marine turtles, fish, shells, crabs and octopus. Traditional methods include handlining, diving, spearing, reef-gleaning, cast-netting, gill-netting, trolling from dinghies, jigging and seining. Restrictions on traditional fishing harvest currently exist for tropical rock lobster and sea cucumbers.

The Torres Strait prawn fishery is a multi-species prawn fishery (endeavour, tiger and king prawns) that operates in the eastern part of the Torres Strait. This is the most valuable commercial fishery in the Strait.

The Torres Strait Tropical Rock Lobster Fishery is the most important commercial fishery to the Torres Strait Islanders. Lobsters are taken by divers working mainly from four to six metre aluminium dinghies, using a short hand-spear and free-diving or breathing surface-supplied air from hookah equipment. Commercial fishing occurs from December to September, with a fishery closure during October and November.

The Torres Strait Spanish Mackerel Fishery operates predominantly in the eastern Torres Strait, targeting the narrow-barred Spanish mackerel. Spanish mackerel are fished by trolling, generally from dories or dinghies operating either to a primary boat or by themselves.

The Torres Strait Fin Fish Fishery is a multi-species, multi-gear fishery targeting a range of reef and inshore fish. Fin fish in the reef line-fishing sector are taken either by hand-held fishing lines, fishing rods or mechanically operated reels and lines.



The Torres Strait Beche-de-mer Fishery is an important commercial fishery for Torres Strait Islanders. Fishing for beche-de-mer is mainly by free-diving from dinghies or by hand collection along reefs at low tide.

The shipping channel is well known to commercial operators and vessels of all types are required to adhere to the maritime safety rules for collision avoidance. Project-related shipping is not expected to affect the use of the Torres Strait by commercial or recreational fishers.

#### *17.4.3.5 Great Barrier Reef*

The GBR supports 10 commercial fisheries. The main commercial fisheries within the GBR are the net, trawl, line and pot fisheries. Net and pot fisheries are undertaken close to the coast whereas trawling and line fishing extend further offshore. In 2006/2007 commercial fishing in the GBR contributed approximately \$139 million of value to the region (GBRMPA 2009b). Product taken in the GBR is an important component of the Queensland seafood industry, accounting for about 95% of the reef line fishery, 60% of the trawl fishery and 40% of the net fishery.

The *Great Barrier Reef Marine Park Zoning Plan 2003* (Zoning Plan) applies to all fishing activities and results in about 67% of the GBRMP being available for various types of fishing. Some types of commercial fishing are permitted within the General Use Zone of the Zoning Plan. Recreational fishing on the GBR is a long established and important social activity for residents and tourists (GBRMPA 2009b). Focused on inshore areas, recreational fishing is undertaken by approximately 15% of the coastal population (GBRMPA 2009b). Recreational fishing is permitted within the General Use Zone and Habitat Protection Zones. The inner GBR Designated Shipping Area, which would be utilised by Project-related shipping, is located in the General Use Zone. The shipping channels are well known to commercial operators and vessels of all types are required to adhere to the maritime safety rules for collision avoidance.

Potential Project-related shipping impacts in the GBR such as collision, grounding, oil spills, introduction of marine pests, vessel strike, anti-fouling paints, waste disposal or anchor damage have been assessed in **Sections 11.4.4, 11.4.5 and 11.4.6**. The assessments determined that the impact would be negligible. A risk assessment based on the risks to the GBR related to shipping identified in GBRMPA (2009b) concluded that any cumulative impacts of Project-related shipping is not expected to change the existing risk profile (refer to **Section 18.4.4**). In conclusion, Project-related shipping is not expected to affect the use of the GBR by commercial or recreational fishers.

#### **17.4.4 Other Businesses**

Economic modelling indicates that the initial construction phase of the Project would provide a direct contribution of \$264 million and an indirect (flow on) contribution of \$167.6 million into the local economy (Weipa, Aurukun, Napranum, Mapoon and the Cook Shire) (refer to **Section 17.4.1** and **Appendix 17A**). The direct and indirect annual contribution to the local economy at 22.5Mdtpa production would be \$675 million and \$194 million respectively. At 50Mdtpa, the direct and indirect annual contribution to the local economy would be \$1,500 million and \$451 million respectively.

These contributions would have a significant positive impact on the local economy and therefore on local suppliers of goods and services. The benefits for FNQ, Queensland and Australia are likewise significant (refer to **Section 17.4.1** and **Appendix 17A**).

The SIMP contains a Local and Indigenous Sourcing Action Plan designed to best maximise opportunities for local Indigenous and non-Indigenous business to develop and to participate in the Project (refer to Appendix 6 of RTA (2012)). Actions include the development of specific tender evaluation

criteria to encourage local and Indigenous benefit in contracts where possible and implementation of clear communications to potential suppliers to ensure understanding and awareness of Project procurement requirements.

During stakeholder consultations, Traditional Owners cited a number of business opportunities that they would like to investigate, including land and coastal management, timber harvesting, seed collection and rehabilitation. RTA supports the establishment of a timber harvest operation south of the Embley River that would harvest timber on areas of the mining lease proposed to be mined, or cleared for development of Project infrastructure in a manner that does not impede development work and complies with relevant statutory and health, safety and environmental requirements. RTA also supports the establishment of seed collecting businesses to help supply the Project's rehabilitation needs, modelled on the successful programme that exists for RTA's existing operations.

#### 17.4.5 Housing and Infrastructure

The workforce for RTA's operations predominantly resides in Weipa. Aurukun and Mapoon are too distant for daily work commutes and the majority of Indigenous employees tend to base themselves in Weipa rather than Napranum. RTA is by far the dominant local employer and the size of the mine-related workforce is the key driver of the residential population.

The construction phase would take 30 to 36 months and workforce numbers would vary over that period, averaging approximately 950 full-time equivalents. The Project construction workforce would be a "single status" workforce, housed predominately in a temporary on-site camp near the Boyd infrastructure area. When not on roster, the construction workers would return to their point of hire. The large majority of these would be from the east coast of Australia and would fly-in and fly-out of Weipa airport and be transported back and forth to the construction site by RTA in buses. Local hire construction workers would return to their existing residences in Weipa, Napranum, Aurukun or Mapoon when off roster. No changes to the Weipa airport infrastructure would be required, although additional commercial flights would be required during the construction period.

The SoE Project operational workforce would be based in Weipa. The 2011 Census recorded that the population of Weipa was 3,334, which amounted to 2.8 residents for every RTA employee (1025) and contractor (183). The projected average operational workforce is shown in **Table 17-4**, along with Weipa population projections based on a resident-to-RTA workforce multiplier of 2.8.

**Table 17-4 Population Projections for Weipa**

Year	Average Mining Workforce*			Projected Population
	Employee	Contractor	Total	Weipa
2006	777	107	884	3,089 (Census)
2011	1,024	183	1,207	3,334 (Census)
SoE 22.5Mdtpa and Andoom	1,200	180	1,380	3864
SoE 50Mdtpa	1,170	176	1,346	3,769

\*Source: RTA

Note: the reduced workforce number at 50Mdtpa is a result there being no operational workforce north of the Embley river

The projected population increase due to the Project is in the range of 440 to 530, approximately. RTA commenced the development of more residential land for housing in 2012. The second stage of the Golf Links Estate development commenced in 2012, comprising 50 residential lots, a 14-property

single story complex and a separate multi-storey apartment block with five properties. RTA has committed to undertake capital works to upgrade the town water and sewerage infrastructure before housing is constructed on these new blocks.

There is adequate suitable land for additional residential development to meet demand, if and when required. While this land is currently outside the Weipa town boundary, this boundary may be extended, in consultation with Traditional Owners and the State Government. The ability to expand housing supply is expected to moderate upward pressure on housing and rental prices over time, however, shorter term spikes in demand do occur. For example, the introduction of about 200 Commonwealth staff and contractors in 2011 to support the operations of the detention centre at the Scherger RAAF base caused a shortage of accommodation. In particular, this resulted in a scarcity of accommodation for tourists and regular contractors.

A new 38-bed motel has recently opened in Weipa. In addition to the SoE on-site camp, RTA proposes to provide up to 200 beds for contractor accommodation near Nanum if required to help alleviate short term accommodation pressures during construction.

RTA plans and manages workforce accommodation needs. To do this it has personnel who monitor housing demand and availability trends, and infrastructure capacity. RTA is in the unique position of managing the town of Weipa and as such is well placed to plan ahead to cater for any increase in demand for housing and infrastructure related to the Project. The SIMP contains a commitment to develop a Housing, Accommodation and Infrastructure Master Plan (Appendix 6 of RTA (2012)). The plan would be based on an analysis of medium and long term residential, industrial, commercial, and community land requirements and an assessment of the availability of land.

Expanded housing stock and infrastructure are expected to be able to be provided such that the projected increase in population does not cause a significant shortfall in supply. Nor is the Project expected to change the social character of Weipa significantly.

## 17.4.6 Tourism

### 17.4.6.1 *Western Cape Region*

The most prominent and available form of tourist accommodation in the region is caravan and camping facilities. These facilities are targeted towards budget travellers. Hotels, motels, retreat and backpacker accommodation is also available in Weipa. A number of tours and recreational activities are run from the caravan and camping grounds. It is estimated that 90% of tourists who visit Weipa do so primarily to fish (GHD 2005). Recreational fishing is discussed in **Section 17.4.3.3**.

Based on 2007 consultations for the Weipa Community Baseline Survey, SGS (2008) concluded that Weipa tourist accommodation was at full capacity, particularly during the dry season. It was concluded that government employees and contractors unable to find long-term accommodation utilise camping grounds and hotels, crowding out tourists. While this is beneficial for operators of accommodation and food businesses, these government employees and contractors are less likely to utilise tour and recreational services than tourists. The introduction of about 200 Commonwealth staff and contractors in 2011 to support the operations of the detention centre at the Scherger RAAF base exacerbated this situation.

To help minimise the crowding-out of tourist and other accommodation during construction, RTA proposes to provide up to a 200 beds for contractor accommodation near Nanum if required, in

addition to the SoE on-site camp. The Project is unlikely to result in a change in tourist visitation to the Western Cape.

#### *17.4.6.2 Great Barrier Reef*

Commercial marine tourism is now a major commercial use of the GBR (GBRMPA 2009b). It offers a wide range of visitor experiences, ranging from cruise ships and live-aboard vessels to day trips on high speed catamarans, kayaking tours, snorkelling and scuba diving. Almost all these experiences are nature-based. In 2008, approximately 1.8 million tourism visits were made to the GBRMP and almost three million people were transported by the tourism fleet to visit island destinations throughout the region (GBRMPA 2009b).

Approximately 80% of all tourism activity in the GBR occurs in about 7% of the region. In 2008 approximately 44% of full day visits to the GBR occurred offshore from Cairns and Port Douglas with 43% occurring around the Whitsunday islands and adjacent reefs (GBRMPA 2009b).

Commercial marine tourism may be conducted in almost all zones and localities of the GBRMP so long as a Marine Parks permit has been obtained. In addition, boating, diving and photography are permitted within the General Use Zone of the Zoning Plan. Recreational fishing is permitted within the General Use Zone and Habitat Protection Zones. The inner GBR Designated Shipping Area which would be utilised by Project-related shipping is located in the General Use Zone.

Potential Project-related shipping impacts in the GBR such as collision, grounding, oil spills, introduction of marine pests, boat strike, anti-fouling paints, waste disposal or anchor damage have been assessed in **Sections 11.4.4, 11.4.5 and 11.4.6**. The assessments determined that the impact would be negligible. A risk assessment based on the risks to the GBR related to shipping identified in GBRMPA (2009b) concluded that any cumulative impacts of Project-related shipping is not expected to change the existing risk profile (refer to **Section 18.4.4**). In conclusion, Project-related shipping is not expected to change visitation patterns or the use of the GBR by tourists.

#### *17.4.7 Scientific Use*

The GBR is an international hub of tropical marine ecosystem research (GBRMPA 2009b). There are presently six research island stations located throughout the GBR region (Lizard Island, Low Isles, Green Island, Orpheus Island, Heron Island and One Tree Island). The GBR supports the academic and educational output of the James Cook University's School of Marine and Tropical Biology, which is recognised as a leader in aquaculture, marine biology, marine sciences, ecology and conservation. The Australian Institute of Marine Science (AIMS) also conducts research within the GBR including the coordinating of the Great Barrier Reef Ocean Observing System. Most research has focused on the biophysical environment. Scientific research on the GBR also contributes to training and capacity building for researchers throughout Australia and internationally (GBRMPA 2009b).

Potential Project-related shipping impacts in the GBR such as collision, grounding, oil spills, introduction of marine pests, boat strike, anti-fouling paints, waste disposal or anchor damage have been assessed in **Sections 11.4.4, 11.4.5 and 11.4.6**. The assessments determined that the impact would be negligible. A risk assessment based on the risks to the GBR related to shipping identified in GBRMPA (2009b) concluded that any cumulative impacts of Project-related shipping is not expected to change the existing risk profile (refer to **Section 18.4.4**). In conclusion, Project-related shipping is not expected to change scientific use activities.



## 17.4.8 Traditional Use Activities

### 17.4.8.1 Project Area Traditional Use and Cultural Heritage

The area south of the Embley River is formally recognised as the traditional lands of the Wik and Wik-Way people. The Project area is covered by an Indigenous Land Use Agreement (ILUA) under the Commonwealth *Native Title Act 1993*, known as the Western Cape Communities Coexistence Agreement (WCCCA). The WCCCA provides the process by which consultation with Traditional Owners is to occur in relation to mining activities such as the SoE Project. The implementation of the WCCCA is monitored and reviewed by the Western Cape Coordinating Committee (WCCC), which has broad Traditional Owner representation, under which sits a SoE Project Sub-committee tasked specifically with being the forum in which Traditional Owners and RTA can consult, review, provide advice and make recommendations to the WCCC related to the activities of the Project.

RTA's existing operations are relatively remote from the Project area and from Aurukun, the nearest community. The Project would bring development activities much closer to this community and for the first time will directly affect the traditional lands of the Wik and Wik-Way people. The relationship between Traditional Owners and their country is framed as a complex relationship between both cultural heritage and the natural environment. These combined form a cultural landscape that is intrinsic to the cultural identity of Wik and Wik-Way people.

The cultural landscape of the Wik and Wik-Way includes numerous archaeological sites and features of the natural environment, including specific flora and fauna. Archaeological sites often occur within or near other places of cultural significance and in some cases may be important features of the overall cultural values attributed to the place. Places of cultural significance are not equally distributed across the Project area. They tend to be concentrated in coastal areas and are sometimes associated with prominent features of the landscape such as the coastal bauxite cliffs, waterways and remnant vine forest. The majority of places of cultural significance are associated with oral histories and stories, hence the term "story place" that is commonly used by local Traditional Owners when referring to these locations. They can also be described as ethnographic sites. Many of these places have traditional names and these are commonly used throughout the wider community. The stories associated with these places relate to the Traditional Owners' beliefs about the creation of country and events that occurred in the past.

The WCCCA sets out the agreed process for consultation between RTA and the WCCC, and Traditional Owners identified by the WCCC. This enables the Traditional Owners who can speak for country to participate in heritage surveys. This process has been followed to complete a number of cultural heritage surveys in the Project area (Cochrane 2006a and 2006b, RTA 2009a and 2009b, Woolfe 2007, Woolfe 2009a and 2009b). Previous anthropological fieldwork has identified 15 places of cultural significance to Traditional Owners (Sommer and Sommer 1994). These include story places which have oral histories detailing information about creation, magic, taboo, hunting, and ritual. These stories are culturally sensitive and some of their locations cannot be disclosed to the public without the consent of the Traditional Owners. Other sites are traditional hunting and gathering areas and places of contemporary use for camping, fishing and hunting.

Cultural heritage surveys of the Project area have found that shell middens and ethnographic sites are located outside of the areas for proposed facilities and future mining (refer to Section 11.1 of RTA (2011) for detail of survey findings). The results of archaeological surveys suggest that scarred trees are the site type mostly likely to be impacted by the Project. Other site types are typically found in the riparian vegetation zone around watercourses, the coastline, and significant vegetation such as

thickets of vine forest. Apart from Dam C and some haul road and access road crossings, Project disturbance does not occur within the riparian vegetation zone.

Under the WCCCA, RTA is required to provide the WCCC with six months minimum notification prior to undertaking commercial activities, including mining, that have the potential to damage places of cultural heritage value. This notification is in the form of a written work program outlining the location and size of the Project area, the nature of the project and a request for the names of Traditional Owners who should be consulted about cultural heritage matters.

RTA consults directly with the Traditional Owners identified and nominated by the WCCCC to establish the scope of any required cultural heritage assessments. The Traditional Owners nominate the names of people they wish to be involved in the heritage assessment. Up to eight, but normally four, Traditional Owners participate in heritage assessment field surveys. Ethnographic surveys are also undertaken and these often involve Traditional Owners from a wider age group. Specific site visits are also undertaken to discuss management issues.

Following the heritage assessment, RTA meets with the WCCC to discuss the heritage assessment report and recommended management of identified cultural heritage sites. The report also describes the proposed commercial activities. The heritage assessment report is submitted to the WCCC Environment and Heritage Sub-committee. These discussions between RTA, the Traditional Owners identified by the WCCC and WCCC representatives inform the content of Site Protection Plans for specific areas that would be affected by mining and mining-related activity. Once the negotiated Site Protection Plans have been implemented, the RTA manager of the commercial activity would issue a Community, Heritage and Environment permit authorising the activities. The dispute resolution process outlined in the WCCCA would apply if RTA and the WCCC representatives fail to negotiate a Site Protection Plan.

RTA has considerable experience working with Traditional Owners to manage cultural heritage at the existing Weipa operations. Management strategies have been developed with Traditional Owners to ensure that Indigenous sites are managed in a culturally appropriate manner. These include the creation of heritage buffers within mining areas to protect scarred trees and shell middens, the relocation of scarred trees and stone artefacts outside of mining areas and the creation of scarred tree keeping places. Significant cultural heritage places are often protected by signage and all employees are required to complete cultural awareness training. Specific Project inductions are undertaken with staff to familiarise them with the relevant heritage protection measures. Traditional Owners are also employed as heritage monitors to observe activities identified as having high potential to uncover cultural heritage not visible during the assessment surveys.

Features of the natural environment also have complex cultural associations. Many of the flora and fauna species in the area have significant cultural heritage value for Traditional Owners. These values have been discussed with Traditional Owners and documented in cultural heritage survey reports (e.g. Dalley 2010). Certain plants may be traditional sources of bush food and or medicine and can also be used to make tools, weapons, shelter and art (e.g. basket weaving). Pandanus is one such example which can be used for basket weaving and making dance costumes while the nuts can also be eaten. Many of the plant species retain contemporary importance as some Traditional Owners living in Aurukun continue to utilise them in a traditional manner. Some animal species living within the Project area are also important to Traditional Owners and are often important sources of bush food (e.g. wallabies, emu, magpie geese, freshwater turtles and fish). Certain animals (e.g. crocodile, emu, some bird species) may have totemic associations to individual Traditional Owners (a person closely identifies with a plant or animal). They may believe that they are related to their totem and there may

be taboos associated with it. For instance, many people will not eat an animal that is their totem. Further, some Traditional Owners believe that once deceased they return to country in the form of their totem.

RTA would work with Traditional Owners and the SoE Project Sub-committee for the selection and appointment of consultants and development of the scope of ethno-botanical and ethno-faunal studies of the Project area. Information from such studies would be incorporated into management arrangements for the Project area. RTA would also evaluate options to work collaboratively to develop a knowledge database of flora and fauna species of cultural significance in the region.

Construction and operation of the Project would affect, from time to time, the ability of Traditional Owners and the general public to access certain parts of the Project area for cultural reasons, fishing, hunting and recreational purposes. The prime restriction on access relates to the need to separate the public from active mining and development areas to maintain safety. RTA would continue to manage access for Traditional Owners to specific areas, including the three outstations in the Project area at Amban (False Pera Head), Waterfall (near Ina Creek) and Six Ti-Tree (just south of Waterfall). Amban, Waterfall and Six Ti-Tree are generally utilised in the dry season for varying periods. Access would be managed in accordance with RTA's obligations outlined within the WCCCA. This would be monitored on a regular basis in line with the mine plan, safety requirements during construction and operational phases and the needs of Traditional Owners of the Project area. RTA will work collaboratively with the relevant SoE Project Sub-committee established pursuant to the WCCCA to develop a land access strategy aimed at causing as little disturbance as possible to Traditional Owner access. The strategy would aim to provide access for Traditional Owners both during active and non-active mining periods for areas including Hey Point, Boyd Bay, Pera Head, Amban/Norman Creek and Waterfall/Six Ti-Tree/Ina Creek.

During consultation, various stakeholders noted that improved access to the Project area, via the proposed mine access road and barge/ferry terminals, may increase some recreational activities that are considered to have negative impacts on the Project area and adjacent coastal and beach areas (e.g. 4WD vehicle damage, bike activity on beaches). To minimise this risk, the mine access road and barge and ferry terminals would be available for mine-related business use only. Signage at terminal and access tracks along the eastern boundary of the lease would provide information on restrictions on access and activities.

To mitigate the impacts of recreational use of the Project area, RTA will work with Traditional Owners in accordance with the WCCCA and other relevant stakeholders to develop an effective permit system to protect significant cultural heritage sites and environmental values and allow controlled access for recreational purposes. The administration of such a system by Traditional Owners would be subject to discussions between Traditional Owners, RTA and other stakeholders.

RTA remains committed to the existing obligations under the WCCCA with regard to Traditional Owners involvement in land and coastal management. In response to the issues raised by Traditional Owners, RTA recognises and supports the need for the joint development of a comprehensive Communities, Heritage and Environment Management Plan (CHEMP) for the area of the mining lease south of the Embley River (refer to SIMP, Appendix 6 of RTA (2012)). The CHEMP would provide the framework for RTA and Traditional Owners to work together to manage the community, heritage and environmental values of the Project area in the context of the WCCCA. The CHEMP would include, but not be limited to, details of buffer zones and land management strategies for Waterfall (Ina Creek), False Pera Head (Amban), Pera Head and Boyd Bay. The first of a series of CHEMP Workshops has been held on country with Traditional Owners and members of the SoE Project Sub-committee to develop the

concept, agree on methodology, and nominate family members to participate in consultation and field work.

In order to facilitate the implementation of the CHEMA, the SIMP contains a Land and Sea Management Programme designed to engage Traditional Owners directly in land and sea management activities in the construction and operational phases of the Project (refer to Appendix 6 of RTA (2012)). The Programme aims to:

- implement land and sea management activities through direct employment of Traditional Owners in both permanent and casual roles with RTA; and,
- investigate and pursue opportunities to establish and promote career development pathways for Traditional Owners into areas such as environmental management, land management, cultural heritage management and/or community relations.

Traditional Owner involvement in the LSMP shall include, for example, activities such as the establishment of environmental buffers, fire management, weed management, and marine turtle nesting monitoring.

In conclusion, the need to safely construct and operate the Project would affect, from time to time, Traditional Owner access to certain parts of the Project area for cultural reasons, fishing, hunting and recreational purposes. RTA would work collaboratively with Traditional Owners to develop a land access strategy aimed at minimising restrictions on such access. The Project also facilitates a greater opportunity for more Traditional Owners to spend more time ‘on country’, more often, than has been the case in the recent past. Involvement in the Project area to date has centred mainly on participation in cultural heritage surveys, flora and fauna surveys, and ‘welcome to country’ ceremonies. The CHEMA development process has commenced and it, and the Land and Sea Management Programme, provides an opportunity for Traditional Owners to increase the level and frequency of direct involvement with land and seas in the Project area.

#### **17.4.8.2 Torres Strait**

There are strong cultural, social, economic and spiritual links between Torres Strait Island people and their sea country, which are governed by their distinct *Ailan Kastom* (Island Custom) (TSRA 2012). A Land and Sea Management Strategy for the Torres Strait (Bessen Consulting Services 2005) has been developed to deliver land and sea projects through the Torres Strait Regional Authority Land and Sea Management Unit. Dugongs and marine turtles are culturally significant to Torres Strait Islanders.

It is considered that the impacts from Project-related shipping activities on Torres Strait Islander cultural heritage values and traditional use would be similar to impacts (i.e. negligible) on cultural heritage values and traditional use within GBR due to the similar nature of existing use (refer to **Section 17.4.8.3**). Therefore Project-related shipping is not expected to change traditional use activities or Indigenous cultural heritage values.

#### **17.4.8.3 Great Barrier Reef**

The GBR is ‘sea country’ for around 70 Traditional Owner groups. For these groups, the continued visitation and connection to these areas through traditional hunting and fishing, ceremonies and stories is an integral part of Indigenous culture, and is of social, economic and spiritual importance to these communities. Various Traditional Owner groups are involved in natural resource management activities within the GBR. Activities include collaboration in research projects and voluntary agreements to suspend hunting of threatened species, particularly around Dugongs and marine turtles and Indigenous ranger programs (GBRMPA 2009b).

Hunting of marine turtles and Dugongs within the GBR is recognised under the Commonwealth *Native Title Act 1993*. The activity is governed by strict protocols that dictate how hunting is undertaken and by whom (GBRMPA 2009b).

Potential Project-related shipping impacts in the GBR such as collision, grounding, oil spills, introduction of marine pests, anti-fouling paints, waste disposal or anchor damage have been assessed in **Sections 11.4.4, 11.4.5 and 11.4.6**. The potential impact of Project-related boat strike on marine species such as Dugong and marine turtles in the GBR has been assessed in **Section 11.4.2.1**. The assessments determined that the impact would be negligible. A risk assessment based on the risks to the GBR related to shipping identified in GBRMPA (2009b) concluded that any cumulative impacts of Project-related shipping is not expected to change the existing risk profile (refer to **Section 18.4.4**). In conclusion, Project-related shipping is not expected to change traditional use activities or Indigenous cultural heritage values.

## 17.4.9 Non Indigenous Heritage

### 17.4.9.1 Project Area

A total of seven non-Indigenous heritage sites have been identified within the Project area. The majority of these sites appear to be associated with early exploration drilling for bauxite, extending back to the 1950s and 1960s. These include an overgrown airstrip near False Pera Head, three log crossings (two on Norman Creek and one on the Ward River), a residential drilling camp, house stumps that are likely to be remnants of a small satellite mission village and the Weipa Aboriginal Reserve. In addition to the sites described above, there are a number of other physical features associated with non-Indigenous activity in the Project area. These features generally date to within the past 30 years and cannot technically be classified as heritage sites. These include:

- the remnants of two fishing huts (one at Waterfall and one at the mouth of Norman Creek) believed to date to the 1970s;
- a plane crash site which dates to 1993, in which several people perished, marked by a plaque near Norman Creek; and,
- a camp used by a transient man during the 1980s, located around Hey Point.

Based on the significance assessment outlined in the Queensland EIS (RTA 2012), all of these sites were determined to be of low local significance. None of these sites would be disturbed by Project activities, except the old drillers camp in the vicinity of Dam C. None of the identified non-Indigenous heritage sites, nor the Project area as a whole, are assessed as being of state or national significance.

### 17.4.9.2 Shipping Routes

Several shipwrecks are known to occur in the general vicinity but not within the shipping routes. Any shipping hazards are recorded on navigation charts. With the exception of bauxite shipping embarking/disembarking from a new Port approximately 45km south of existing Port of Weipa, the majority of Project-related bauxite, cargo and fuel shipping would traverse the same shipping routes as existing Weipa bauxite, cargo and fuel shipping.

The potential impacts from Project-related shipping activities on shipwrecks in the vicinity of the shipping routes would be negligible.

