Rio Tinto Alcan

Section 2

General Information and Background

2 General Information and Background

2.1 Introduction

RTA Weipa Pty Ltd (RTA) and its parent company Rio Tinto Aluminium Limited (formerly Comalco Aluminium Limited) have mined and shipped bauxite from the existing Weipa operations, north of the Embley River since 1963. Weipa is located on the western side of Cape York on the Gulf of Carpentaria in northern Queensland, approximately 600km north-west of Cairns (refer **Figure 2-1**). RTA holds mining lease (ML) 7024 (granted 1 January 1958) pursuant to the *Commonwealth Aluminium Corporation Limited Agreement Act 1957* (Qld) (Comalco Agreement Act), a Queensland "Special Agreement Act" and ML6024 (granted 25 July 1985) pursuant to the Comalco Agreement Act and *Mineral Resources Act 1989* (Qld).

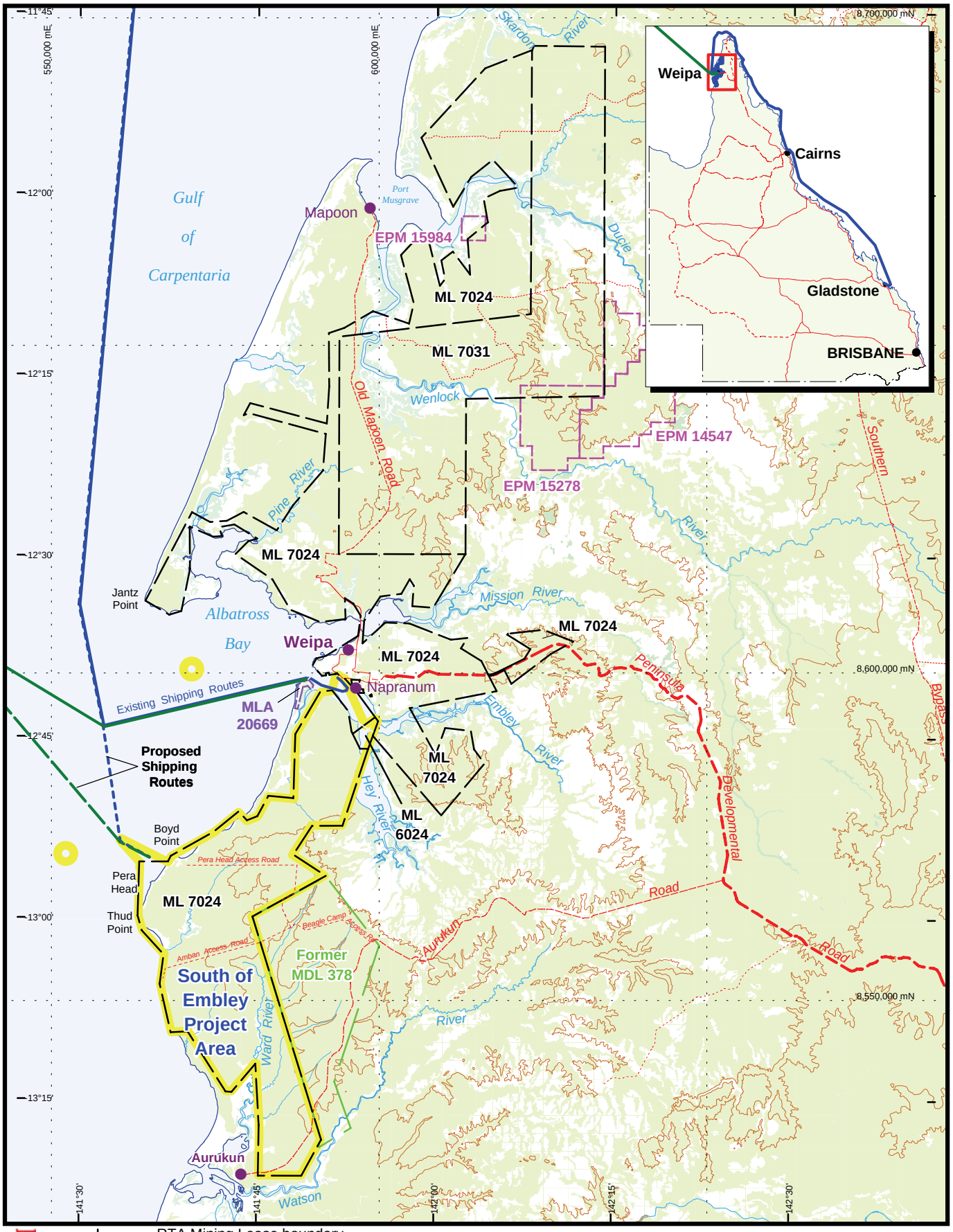
RTA is currently mining the East Weipa and Andoom deposits located on ML7024 north of the Embley River. RTA is also mining the adjacent Ely bauxite deposit (on ML7031) held by Alcan South Pacific Pty Ltd (acquired by Rio Tinto in 2007) under an agreement. Mined bauxite is trucked to one of two beneficiation plants located at Lorim Point and Andoom. Product bauxite processed at the Andoom beneficiation plant is railed from Andoom to Lorim Point and conveyed to RTA's stockpiles prior to shipment from the Port of Weipa (refer **Figure 2-2**). Bulk carriers travel north from the Port of Weipa through the Gulf of Carpentaria. Vessels supplying international export markets (e.g. China) typically pass to the west of West Papua then east of the Philippines. Vessels supplying the Australian market travel to Gladstone via the Torres Strait shipping route and the inner Great Barrier Reef (GBR) Designated Shipping Area.

The bauxite reserves north of the Embley River are gradually depleting, and with continuing demand for bauxite, RTA has undertaken extensive drilling programs on ML7024. Significant bauxite reserves have been identified on the portion of ML7024 that lies south of the Embley River which could sustain a mining operation for about 40 years, depending on annual production rate.

As a result of the presence of the Embley River estuary, development of the reserves south of the Embley River poses logistical challenges to the continued use of existing Weipa infrastructure. The proposed project, referred to as the South of Embley (SoE) Project (or "the Project"), consists of the construction and operation of a bauxite mine and associated processing facilities, barge and ferry terminals, a Port and shipping activities. The Project involves a staged increase in production up to 50 million dry product tonnes per annum (Mdptpa). The initial production capacity is subject to ongoing feasibility studies but is likely to be 22.5Mdptpa. This EIS has been prepared to assess the impacts on matters of national environmental significance (matters of NES) for a likely initial production capacity of 22.5Mdptpa up to a maximum production capacity of 50Mdptpa. Actual production rates and the timing and size of capacity expansions would depend on market conditions.

This document has been prepared to meet the requirements outlined in the *Tailored Guidelines for a Draft Environmental Impact Statement South of Embley Bauxite Mine and Port Development Cape York Qld* (Tailored EIS Guidelines) prepared by the Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) in July 2012 to address issues relevant to the controlling provisions under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act) (refer **Appendix 2-A**). The relevant controlling provisions for the Project are:

- World Heritage properties (Section 12 and 15A);
- National Heritage places (Section 15B and 15C);
- Listed threatened species and communities (Section 18 and 18A);
- Listed migratory species (Sections 20 and 20A);



RTA Mining Lease boundary
South of Embley Project Area
Oresome Australia Pty Ltd Mineral Sands Project
Former MDL 378
Cape Alumina Pty Ltd's Pisolite Hills Project
RTA Shipping route (domestic)
RTA Shipping route (international)
Locality
Drainage
Road/track
50m Topographic contour

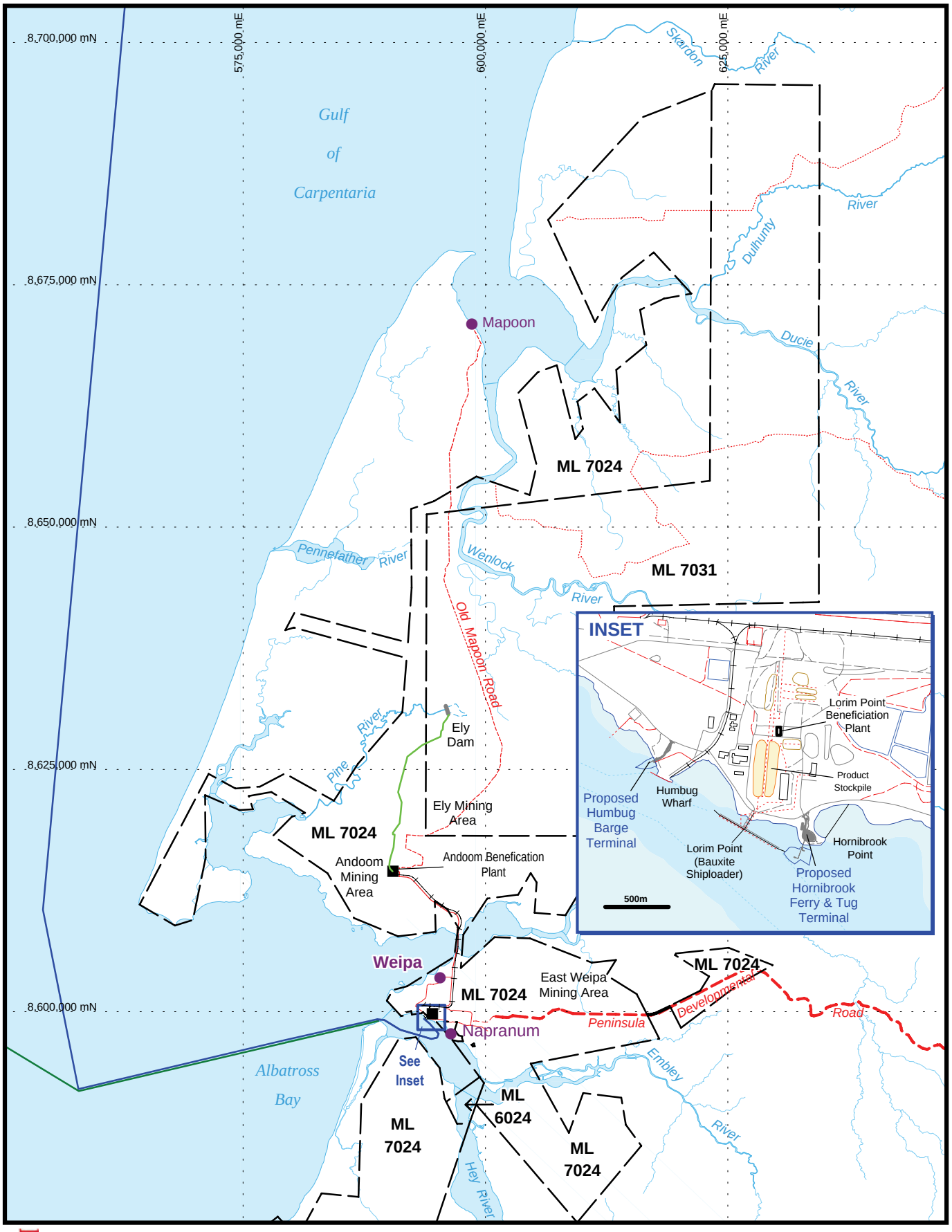
South of Embley Project

Fig. 2-1: Locality Map

N

10 0 10km

Datum/Projection: GDA94/MGA Zone 54 Date: 17/09/2012



RTA Mining Lease boundary
Locality
Drainage
Road/track
Product Bauxite Rail Line
Water Supply Pipeline
Beneficiation Plant
Existing shipping route (domestic)
Existing shipping route (international)

Rio Tinto Alcan

South of Embley Project

Fig. 2-2: Existing Facilities North of the Embley River

N

10 0 10km

Datum/Projection: GDA94/MGA Zone 54 Date: 17/09/2012

- Commonwealth marine areas (Sections 23 and 24A); and,
- Great Barrier Reef Marine Park (Section 24B and 24C).

Details on matters of NES in the Project area and along the Project-related shipping routes are provided in **Section 4**. **Figure 2-3** illustrates the Project-related shipping routes in relation to the Commonwealth marine area (CMA), Great Barrier Reef Marine Park (GBRMP), the Great Barrier Reef World Heritage Area (GBRWHA) and Great Barrier Reef National Heritage place (GBRNHP).

Details and qualifications of the EIS study team are provided in **Appendix 2-B**.

2.2 Project Proponent and Environmental Record

The Project would be developed and operated by RTA, which is a wholly-owned subsidiary of Rio Tinto Aluminium Limited. Both companies are in the Rio Tinto Alcan product group. Rio Tinto Alcan is one of five product groups operated by the global mining group, Rio Tinto. Rio Tinto Alcan supplies bauxite, alumina and primary aluminium to Australia, New Zealand and export markets. Approximately 30% of Australia's total production of bauxite and 25% of its alumina is produced by Rio Tinto Alcan.

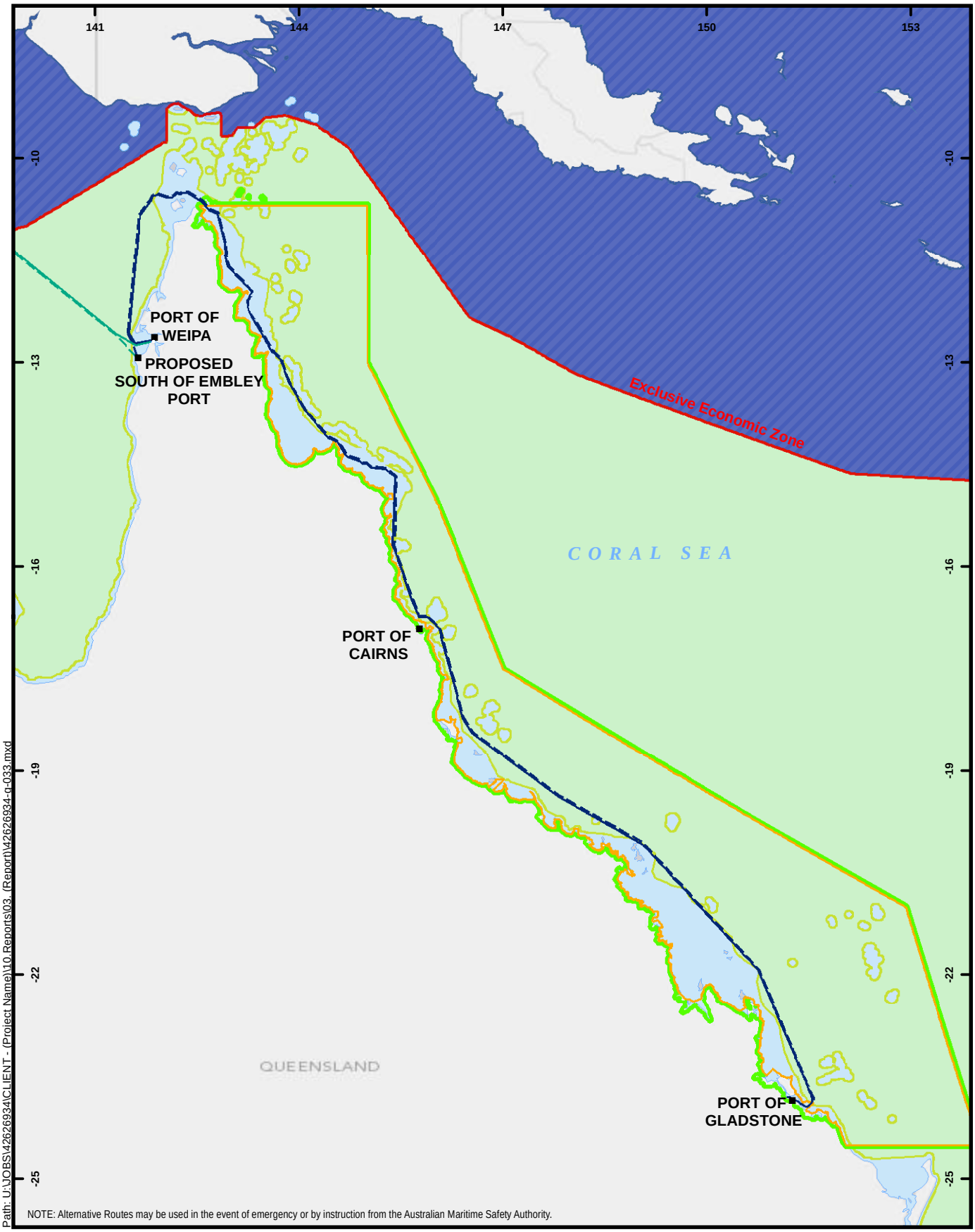
Rio Tinto Alcan's Australian head office for bauxite and alumina is based in Brisbane. Bauxite and alumina interests in Queensland include the existing Weipa operations and the Yarwun and Queensland Alumina Limited alumina refineries in Gladstone.

A record of responsible environmental management has been exhibited during more than 40 years of mining bauxite in the Weipa region. Whilst improvement of environmental performance and outcomes continues, due enquiry indicates that RTA, Rio Tinto Aluminium Limited and their Executive Officers have not been the subject of any proceedings under a Commonwealth, State or Territory law for the protection of the environment or the conservation and sustainable use of natural resources.

RTA has a Health, Safety and Environment Policy that includes commitments to minimise environmental impact and continually monitor and improve the way the company works. Employees and contractors are required to undergo an environment, health and safety induction. Environmental awareness training will also be a regular feature of site-wide training and records of training content and attendance will be maintained. Additional details on this policy are provided in **Appendix 2-C**.

The primary contact for the Project is detailed below:

South of Embley Project
Rio Tinto Alcan (attention Laurie Hicks)
GPO Box 153, Brisbane Qld 4001
Telephone:1800 308 938 (freecall)
Facsimile: + 61 7 3625 3001
Email: external.affairs@riotinto.com



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Rio Tinto Alcan

- Locality
- Exclusive Economic Zone
- RTA Proposed International Shipping Route
- RTA Existing International Shipping Route
- RTA Proposed Domestic Shipping Route
- RTA Existing Domestic Shipping Route
- Great Barrier Reef Marine Park (GBRMP)
- Great Barrier Reef World Heritage Area/National Heritage Place (GBRWHA/GBRNHP)
- Commonwealth Marine Area (CMA)
- International Waters
- Coastal Waters

South of Embley Project

Fig. 2-3: Shipping Routes and MNES

N

0 55 110 220 km

Datum/Projection: GDA94

Date: 06/11/2012

2.3 Project Background and Rationale

RTA is currently mining the East Weipa and Andoom bauxite deposits located on ML7024 north of the Embley River (refer **Figure 2-2**). Exploration activities and Project investigation activities are carried out on ML7024, including the portion that lies to the south of the Embley River, and ML6024.

Significant bauxite reserves have been identified on the portion of ML7024 that lies to the south of the Embley River. Development of these reserves using existing Weipa infrastructure would pose logistical challenges due to the presence of the wide Embley River estuary. The proposed Project to develop these reserves therefore relies largely on new infrastructure located south of the Embley River.

The initial phase of mining operations would involve production to substitute depleted East Weipa economic reserves as well as developing third party markets. Production is likely to start at 22.5Mdptpa. Production capacity would expand to replace Andoom production once those economic reserves are depleted. Production capacity would thereafter be expanded to 50Mdptpa when market conditions are suitable. The Project has bauxite reserves capable of sustaining a mine life of approximately 40 years, depending on annual production rate. Actual production rates and the timing and size of capacity expansions would depend on market conditions.

The key objectives of the Project are to:

- extend the life of RTA's mining operations in Weipa beyond depletion of East Weipa and Andoom reserves;
- maintain continuity of bauxite supply to Gladstone refineries and third parties;
- enable increased bauxite production in the Weipa region in response to the rising world demand for this product and to enhance RTA's competitiveness as a bauxite producer;
- continue mining-related employment in the Western Cape region;
- maintain Weipa as the main residential and commercial support base for the Project;
- operate the Project in a manner that has an acceptable impact on surrounding communities and the environment;
- develop and operate the Project in compliance with all relevant statutory requirements; and,
- continue to maintain an open and honest relationship with stakeholders.

The Project is currently completing feasibility studies, having gained approval for the Project from the Queensland Coordinator-General (CG) in May 2012 (refer **Section 2.7**). It is anticipated that construction would commence in or about 2013 subject to the grant of relevant environmental or other regulatory approvals (described in **Section 2.7**) and the determination of internal investment approvals for the Project by Rio Tinto. The initial construction phase is expected to take approximately 30 to 36 months, depending on the timing of the wet season in relation to Project approvals.

2.4 Project Overview

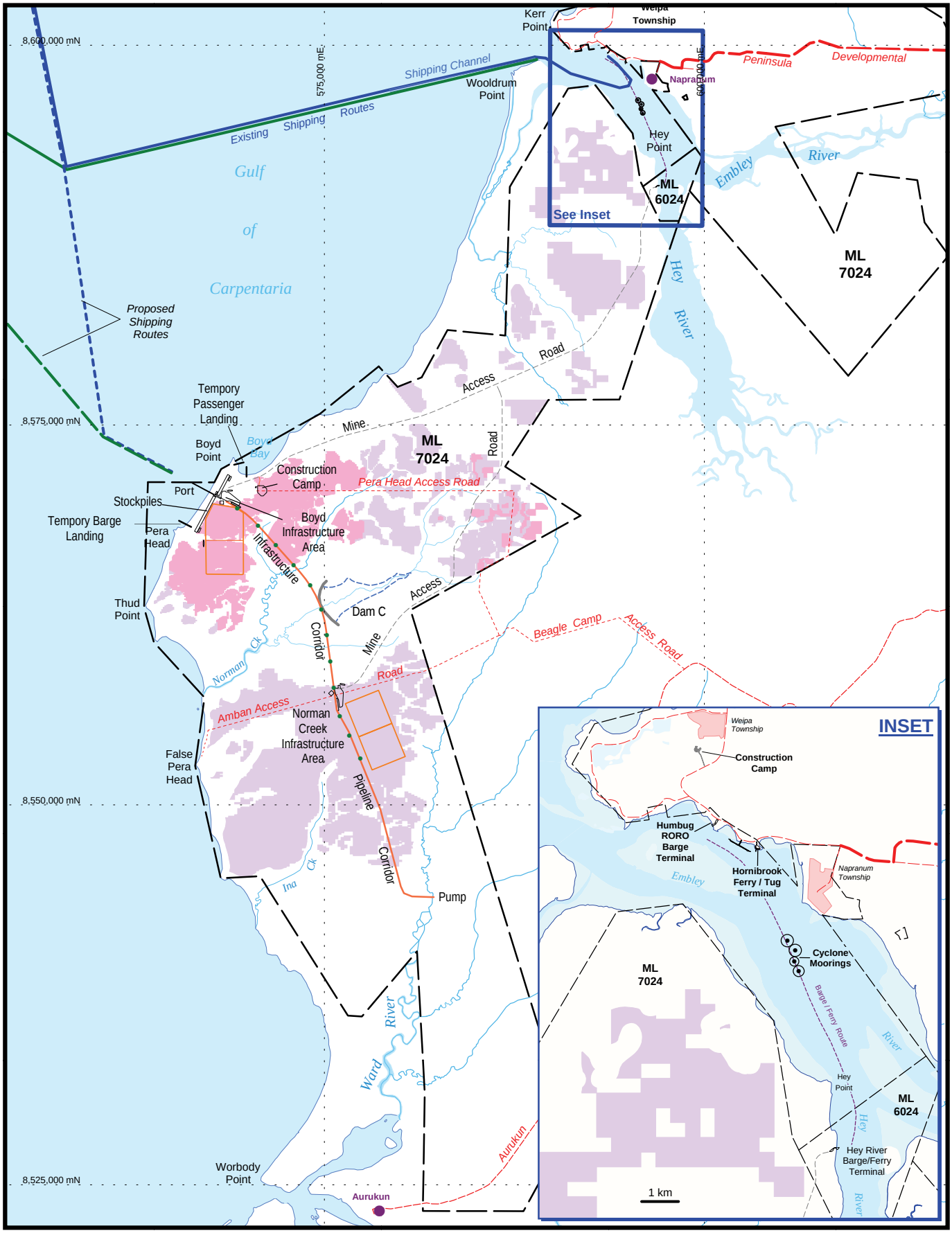
The Project is situated on the western side of Cape York on the Gulf of Carpentaria (refer **Figure 2-1**). The key components of the Project are shown on **Figure 2-4** and **Figure 2-5**.

The Project involves the construction and operation of a bauxite mine and associated processing and Port facilities to be located near Boyd Point on the western side of Cape York Peninsula and the shipping of bauxite from the proposed Boyd Port to either Gladstone or international markets. Boyd Point is approximately 40km south-west of Weipa and 40km north of Aurukun, with the closest mining areas being 4km from Napranum, 15km from Aurukun, and 50km from the nearest cattle station homesteads. The Project area would be predominantly located on a portion of ML7024 south of the Embley River, on ML6024, on certain Strategic Port Land within the Port of Weipa, and offshore dredging and dredged sediment disposal areas (refer **Figure 2-1**).

The Project involves a staged increase in production up to 50Mdptpa. The initial production is likely to be approximately 22.5Mdptpa. Actual production rates and the timing and size of capacity expansions would depend on market conditions. The anticipated mine life is approximately 40 years, depending on production rate.

The Project consists of the following components:

- **bauxite mining** – involving the clearing, salvage of topsoil, stripping of overburden, extraction of up to 50Mdptpa of bauxite, replacement of topsoil and revegetation. Mined areas would be progressively rehabilitated. Refer to **Section 3.4** for a detailed description;
- **bauxite processing** – crude bauxite would be transported using a network of internal haul roads to one of two beneficiation plants (Boyd beneficiation plant, followed by a second plant near Norman Creek). A beneficiation plant separates the bauxite and waste materials through sizing, screening, washing and dewatering. Chemicals are not used in the process, only water. Fine waste materials would be discharged to tailings storage facilities. Refer to **Section 3.5** for a detailed description;
- **product bauxite stockpiles** – beneficiated product stockpiles, built by a stacker for subsequent reclaiming, would be established adjacent to the Boyd Port facilities. Refer to **Section 3.5.3** for a detailed description;
- **ancillary infrastructure** – involving the construction and operation of a diesel-fuelled power station, workshops, warehouse, administration facilities, package sewage treatment plant, temporary waste storage prior to disposal off-site and diesel storage facilities. Refer to **Section 3.6** for a detailed description;
- **barge, ferry and tug facilities** – involving the construction and operation of a new ferry and tug terminal at Hornibrook Point, a roll on/roll off (RORO) barge facility at Humbug Wharf, a new barge and ferry terminal on the western bank of the Hey River, and for the initial construction phase, temporary barge and ferry access near the Port and temporary berthing facilities at the Humbug and Hey River sites. These would be used to transport workforce, materials and equipment between Weipa and the Project area. Refer to **Section 3.6.2** for a detailed description. Approximately 111,000m^3 dredged material derived from the construction of these facilities would be disposed at sea (refer to **Section 3.8.2** for further detail on dredging);
- **temporary on-site camp for the construction phase** – involving the construction of a facility with up to 2,000 beds. Additional accommodation may be constructed in Weipa if required. During the operations phase employees would be housed in the existing Weipa community and commute to site on a daily basis via a river crossing and a new mine access road. Refer to **Section 3.6.4** for a detailed description;



Plans\SoE2013\EIS Figure 2\Fig 2-04 Infrastructure and Conceptual Mine Plan 40 years

Rio Tinto Alcan

- RTA Mining Lease boundary
- Locality
- Road/track
- Freshwater dam
- Barge / Ferry route
- Tailings storage facility
- Mining Years 1 -13
- Mining Years 14 - 40
- Proposed Artesian Bore

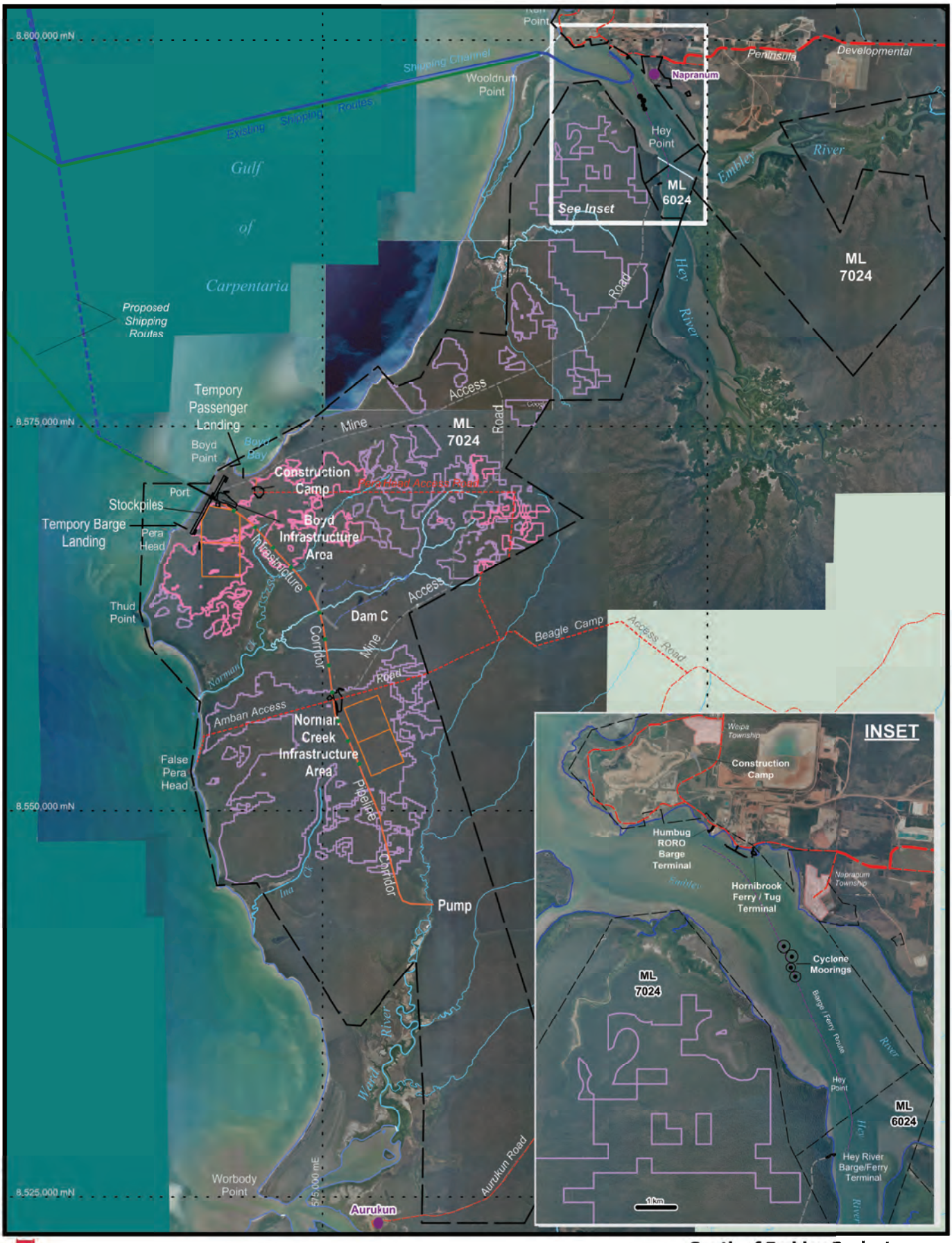
South of Embley Project

Fig. 2-4: Infrastructure and Conceptual Mine Plan (up to 40 years)

N

5 0 5km

Datum/Projection: GDA94/MGA Zone 54 Date: 26/02/2013



PlansISoE2013IEIS Figure 2\Fig 2-05 Infrastructure and Conceptual MP aerial

Rio Tinto Alcan

RTA Mining Lease boundary
Locality
Road/track
Freshwater dam
Barge / Ferry route
Tailings storage facility
Mining Years 1 -13
Mining Years 14 - 40
Proposed Artesian Bore

South of Embley Project

Fig. 2-5: Infrastructure and Conceptual Mine Plan (Aerial Photo)

N

5 0 5km

Datum/Projection: GDA94/MGA Zone 54 Date: 26/02/2013

- **water infrastructure** – involving the construction of a water supply dam on a freshwater tributary of Norman Creek (Dam C), with the later construction of a water pumping station on the Ward River, plus pipelines, water treatment plants (for potable water) and artesian bores. Refer to **Section 3.6.6** for a detailed description;
- **Port and ship-loading facilities** – involving the construction and operation of a new Port, ship-loading and tug mooring facilities between Boyd Point and Pera Head. Works would include a jetty, bulk carrier vessel wharf and berthing structures, tug and line boat moorings, ship-loader and dredging of berth pockets and departure areas (refer to **Section 3.7** for a detailed description). Protected moorings for tugs to use during inclement weather may also be constructed in the Embley River (refer to **Section 3.6.2.3** for a detailed description). The initial construction phase of the Port would result in the disposal of up to approximately 2,600,000m^3 of dredged material at sea (refer to **Section 3.8.1** for further detail on dredging); and,
- **shipping activities** – involving the transport of bauxite in bulk carriers from the proposed Port to international locations as well as continuing bauxite shipping to the Port of Gladstone, and the transport of cargo and fuel for the Project from international and domestic locations (refer **Section 3.9** for a detailed description). The proposed Port facility would be the port of loading and departure for bauxite shipping associated with the Project. Bauxite shipping leaving the Port would travel north past the existing Port of Weipa and through the Gulf of Carpentaria. Project vessels supplying international export markets (e.g. China) would typically pass to the west of West Papua then east of the Philippines. Project vessels supplying the Australian market would travel to Gladstone via the Torres Strait shipping route and the inner GBR Designated Shipping Area (refer **Figure 2-3**). In both cases, once Project vessels have passed the Port of Weipa they would travel via pre-existing shipping routes servicing bauxite mining operations to the north of the Embley River. Cargo and fuel would predominantly be delivered to the Port of Weipa via existing shipping routes from international and domestic ports and transferred to the Project area.

The main infrastructure components of the Project are addressed in **Section 3**.

2.5 Relationship to Other Projects

The Project does not rely on any other project being implemented in order for it to proceed. There are several other existing or proposed projects in western Cape York or which would use Gulf of Carpentaria waters for shipping that have formally commenced an environmental approvals process at either State/Territory and/or Commonwealth level (refer **Section 18.2**). The Project would only be related to the existing RTA operations north of the Embley River and the existing Port of Weipa operations as follows:

- the Project would replace bauxite supply to Gladstone as the reserves at the existing RTA operations north of the Embley River are depleted;
- shipping of bauxite from the existing RTA operations north of the Embley River from the Port of Weipa would continue during the initial stages of the Project. The volume of shipping using the Port of Weipa will over time decrease as the reserves north of Embley River are depleted and shipping from the Project would replace much of the demand;
- the workforce currently engaged in operations at East Weipa and at Andoom would transition to the SoE operations in stages as reserves at those operations are depleted; and,
- fuel and cargo for the Project would predominantly be delivered to the Port of Weipa and then transferred to the Project area.

2.6 Consequences of Not Proceeding and Overall Benefits of the Project

The option of not proceeding with the Project is not financially feasible as the bauxite reserves will be depleted in RTA's current mining areas leading to the progressive closure of RTA's existing Weipa mining operations. Without an alternative source, the Gladstone alumina refineries would lose a viable, ongoing source of bauxite and the town of Weipa would lose a major financial contributor.

The Project is located in the Western Cape Region, which includes the Aurukun, Mapoon, Napranum and Weipa communities and provides numerous social and economic benefits to these communities.

Mining is the principal driver of the Weipa economy and the mining workforce is the principal driver of Weipa's population. Based on 2006 census data (employment data from the 2011 census is not yet available), Mining and Mineral Product Manufacturing accounted for 43% of jobs in Weipa, which equates to approximately 29% of the town's population.

RTA is continuing to work with the Traditional Owners to protect areas of cultural heritage significance and facilitate access to country, subject to mine safety requirements. The Project would continue existing Indigenous employment, training and business development programs and tailor them to the needs of the Project and community.

Economic modelling for the Project has been carried out and is provided in **Section 17.4.1**. The model estimates the total economic contribution to the local, Far North Queensland (FNQ), Queensland and Australian economies. The results of the modelling for the various phases of the Project are:

- Construction Phase (22.5Mdptpa 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 – 22.5Mdptpa 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 – 50Mdptpa 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.

2.7 Legislative Background

The Project requires assessment under both Commonwealth and Queensland environmental legislation. Numerous approvals, permits and licences are required for various components of the development (summarised in **Table 2-1**) which will result in conditions of approval relating to prevention, minimisation and management of relevant impacts. The authority identified in **Table 2-1** is generally responsible for endorsing or approving mitigation measures as required under each approval and in accordance with relevant statutory requirements or policies, unless otherwise specified in the condition of that approval.

Table 2-1 Other Approvals Required

Permit / Approval / Licence	Legislation	Authority	Comments
Project Wide			
Controlled Action Approval	*Environment Protection and Biodiversity Conservation Act 1999* (Cth) (EPBC Act)	Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC)	Following a reconsideration decision, the Project was declared a "controlled action" with six controlling provisions on 15 March 2012. Required if project has, will have or is likely to have a significant impact on matters of national environmental significance. Approval is not required to authorise the proposed shipping activities within the Designated Shipping Areas of the GBRMP.
Environmental Impact Statement	*State Development and Public Works Act 1971* (Qld) (SDPWO Act)	Department of State Development, Infrastructure and Planning (SDIP)	The Queensland Coordinator-General released a report (the 'CG Report') on 23 May 2012, which evaluates the environmental impact statement (EIS) prepared under the SDPWO Act and sets conditions and makes recommendations that must be implemented in subsequent development approvals and licences issued by Queensland authorities. The report is available at: http://www.dsdip.qld.gov.au/resources/project/south-of-the-embley/south-embley-cg-eis-report.pdf
Environmental Authority (EA) (amendment to MIN100939109)	*Environmental Protection Act 1994* (Qld) (EP Act)	Department of Environment and Heritage Protection (EHP)	Covers mining and associated activities as per operational and environmental requirements of an environmental authority (mining activities). An application for an amendment to the EA (for construction and operation of the Project) was submitted on 13 July 2012. The EA application is currently being assessed. Under the SDPWO Act, the EA conditions for the Project must not be inconsistent with the CG Report.

Permit / Approval / Licence	Legislation	Authority	Comments
Humbug and Hornibrook Terminals			
Commonwealth sea dumping permit for dredging and disposal of dredged spoil	*Environmental Protection (Sea Dumping) Act 1981* (Cth)	DSEWPaC	A sea dumping permit is required to authorise the loading of spoil onto any Australian vessel. A sea dumping permit is also required for the disposal of spoil at the existing Albatross Bay spoil ground located in Australian waters. An application for a sea dumping permit for the dredging for the Humbug and Hornibrook terminals has been submitted to DSEWPaC.
Development approval for material change of use for an environmentally relevant activity (ERA) 16 and associated registration certificate.	SP Act, EP Act and *Environment Protection Regulation 2008* (Qld) (EP Reg)	North Queensland Bulk Ports (NQBP) and EHP	Queensland government approvals required for dredging outside the ML. An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report. Note: commencement of the "Greentape Reduction" reform legislation in Queensland (expected on 31 March 2013) will introduce a requirement for an "environmental authority" instead of a registration certificate.
Removal of marine plants – development approval for operational works	SP Act and *Fisheries Act 1994* (Qld)	NQBP (assessment manager) and Department of Agriculture, Fisheries and Forestry (DAFF)	Required if marine plants found to be present and required to be removed. Part of combined development application to NQBP (above) although DAFF would be concurrence agency for assessment. An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report.
Development approval for operational work for barge and ferry terminals	SP Act and *Coastal Protection and Management Act 1995* (Qld) (CPM Act)	NQBP (assessment manager) and EHP	Required for operational work involving reclaiming land under tidal water and operational works in tidal areas of NQBP Strategic Port Land (EHP is a concurrence agency for operational works in tidal waters). An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report.
Hey River Terminal			
Commonwealth sea dumping permit for dredging and disposal of dredged spoil	*Environmental Protection (Sea Dumping) Act 1981* (Cth)	DSEWPaC	A sea dumping permit is required to authorise the loading of spoil onto any Australian vessel. A sea dumping permit is also required for the disposal of spoil at the existing Albatross Bay spoil ground located in Australian waters. An application for a sea dumping permit for the dredging for the Hey River terminal has been submitted to DSEWPaC.
Upgrade of Off-lease (not gazetted) Access Roads			
Development approval for operational works for waterway barrier / fish barrier	SP Act and *Fisheries Act 1994* (Qld)	SDIP (assessment manager) and DAFF	May be required for a waterway crossing if it inhibits fish movement in areas outside the ML. An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for

Permit / Approval / Licence	Legislation	Authority	Comments
			the Project must not be inconsistent with the CG Report.
Development approval for operational work to clear vegetation	SP Act and *Vegetation Management Act 1999* (Qld)	SDIP (assessment manager) and DNRM	May be required if road needs to be realigned or widened in areas outside the ML. Under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report.
Port			
Port	*Commonwealth Aluminium Corporation Limited Agreement Act 1957* (Qld) (Comalco Agreement Act)		Harbour works are authorised under the Comalco Agreement Act, which includes dredging in tidal waters for the Port on ML7024. Development approval under SP Act is not required for works within the ML.
Commonwealth sea dumping permit for dredging and disposal of dredged spoil	*Environmental Protection (Sea Dumping) Act 1981* (Cth)	DSEWPaC	A sea dumping permit is required to authorise the loading of dredged spoil onto any Australian vessel. A sea dumping permit is also required for the disposal of spoil at the proposed new spoil ground located in Australian waters. A sea dumping permit application was submitted on 1 October 2010 and amended on 31 October 2011.
Development approval for operational works for approach channel dredging	SP Act and CPM Act	EHP	Required for operational works in tidal waters outside ML7024. EHP is lead agency for operational works in tidal waters. Under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report.
Development approval for material change of use for an environmentally relevant activity (ERA) 16 and associated registration certificate.	SP Act, EP Act and EP Reg	EHP	Queensland government approvals required for dredging outside the ML. An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report. Note: commencement of the "Greentape Reduction" reform legislation in Queensland (expected on 31 March 2013) will introduce a requirement for an "environmental authority" instead of a registration certificate.
Installation of services associated with camp near Nanum			
Development approval	Comalco Agreement Act	Weipa Town Authority (WTA)	Required for development applications in the Weipa Town Area. An application will be submitted if required.
Shipping Activities[1]			
No Project-specific approvals required			Refer to **Section 2.7.1** for shipping-related legislation.
SoE Mine Facilities			

Permit / Approval / Licence	Legislation	Authority	Comments
Licence to take water (surface water)	Comalco Agreement Act and *Water Act 2000* (Qld)	DNRM	Pre-existing rights to take water for the Project are held under the Comalco Agreement Act and preserved under section 1037A of the *Water Act 2000*.
Water storage dam – development approval	Comalco Agreement Act and *Water Act 2000*	DNRM	Pre-existing rights to build dams for the Project are held under the Comalco Agreement Act and preserved under the *Water Act 2000*.
Failure impact assessment (of dams)	*Water Supply (Safety and Reliability) Act 2008* (Qld)	DNRM	Required for dams with a wall height >8m in height and storage capacity of >500ML. A failure impact assessment has been undertaken for the Dam C water storage dam and submitted to DNRM (formerly DERM).
Licence to take water (sub-artesian)	*Water Act 2000*	DNRM	If required, taking sub-artesian water in declared sub-artesian area would require approval under section 1046 of the *Water Act 2000*. A declared sub-artesian area exists. Use of sub-artesian water is not currently planned.
Licence to take water (artesian)	*Water Act 2000*	DNRM	An application to increase to the existing licence to take artesian water has been submitted and is currently being assessed.
Development approvals for artesian bores	SP Act and *Water Act 2000*	DNRM	Required for installation of artesian groundwater bores. The Comalco Agreement Act permits 12 artesian bores under section 32(b) (or more with Minister's consent). An application for this DA has not yet been submitted. However, under the SDPWO Act, the DA conditions for the Project must not be inconsistent with the CG Report.

2.7.1 Commonwealth

RTA initially referred the Project to the Australian Government Minister for the Environment, Heritage and the Arts (the Minister) for a decision as to whether the Project constituted a controlled action under the provisions of the EPBC Act in 2008. On 2 October 2008, the Project was declared a "controlled action" (Referral No. 2008/4435) and was to be assessed under the Bilateral Agreement with Queensland using the EIS Process under Part 4 of the *State Development and Public Works Organisation Act 1971* (Qld) (SDPWO Act).

Following a change to the proposed Port design to accommodate larger bulk carriers, RTA withdrew Referral No. 2008/4435 and submitted a new referral to the Minister. On 29 October 2010, the Project was declared a "controlled action" (Referral No. 2010/5642), with the following relevant controlling provisions:

- listed threatened species and communities (sections 18 and 18A of the EPBC Act);
- listed migratory species (sections 20 and 20A of the EPBC Act); and,
- Commonwealth marine areas (sections 23 and 24A of the EPBC Act).

The change to the Project and the inclusion of Commonwealth marine areas as a controlling provision meant that the Bilateral Agreement could no longer apply. Instead, the relevant EIS process is under Part 8 of the EPBC Act. Guidelines for the preparation of the EIS were issued by the Minister to RTA and

DSEWPaC confirmed that the draft EIS adequately met those guidelines prior to the public consultation period, which was held between 1 August and 12 September 2011.

After receipt on 9 November 2011 of a request under section 78A of the EPBC Act to reconsider the controlled action decision that was made on 29 October 2010, the Minister revoked the decision of 29 October 2010 on 16 March 2012 and substituted it with a decision that the Project, including shipping activities in the GBRMP, is a 'controlled action' under the EPBC Act. The following matters of NES were listed as additional controlling provisions for the Project:

- World Heritage properties (Section 12 and 15A);
- National Heritage Places (Section 15B and 15C); and,
- Great Barrier Reef Marine Park (Section 24B and 24C).

RTA subsequently submitted a variation to Referral No. 2010/5642 to include shipping activities on 2 April 2012 and DSEWPaC issued a notice of this variation on 11 May 2012. The Minister then issued new *Tailored Guidelines for the preparation of the Draft Environmental Impact Statement* (the 'Tailored EIS Guidelines') in July 2012. This document addresses these guidelines.

This document was advertised for public comment as a "draft EIS" between 22 November and 19 December 2012. The EIS has subsequently been updated and finalised, taking account of and summarising comments received during the submission period, and stating how such comments are addressed in this "final EIS". A summary of the submissions received during the public comment period is provided in **Appendix 2-D**. RTA has provided the final EIS to the Minister.

The Secretary of DSEWPaC will review the final EIS on behalf of the Minister. The Secretary will then prepare and give to the Minister a Recommendation Report relating to the action, which states whether the taking of the action should be approved, and if so, the conditions that should be attached to the approval.

The Minister has a period of 40 business days (beginning on the first business day after the Minister receives the final EIS), in which to decide whether the Project should be approved.

The final approval decision of the Minister and associated conditions will be publicly notified by placing it on the DSEWPaC website.

In accordance with Section 160 of the EPBC Act, the Minister has determined that an assessment under Part 8 of the EPBC Act is required in relation to the issuing of a permit under the *Environment Protection (Sea Dumping) Act 1981* (Cth) (Sea Dumping Act). DSEWPaC has advised that, for the purposes of efficiency, this EIS be scoped such that it meets the requirements of the Sea Dumping Act, so that one assessment is required. The assessment to support the application for a Sea Dumping Permit for dredging and disposal associated with the initial capital dredging at the Port and capital dredging for the tug berths and barge and ferry terminals has been carried out in accordance with:

- *National Assessment Guidelines for Dredging* (Commonwealth of Australia 2009);
- *Annex 2 1996 Protocol to the Convention on the prevention of marine pollution by dumping of wastes and other matter 1972* (the London Protocol) (International Maritime Organisation 1972); and,
- *Waste Specific Guidelines for Assessment of Dredged Material 1972* (International Maritime Organisation 1972).

A description and characterisation of the sediment proposed to be dredged, the proposed disposal sites, and assessment of the potential effects of disposal of dredged material, are presented in **Appendix 7-B**. Detailed sediment characterisation reports have been provided separately to DSEWPaC.

Future capital dredging and disposal for the Port (which would occur subject to market demand), and maintenance dredging and disposal associated with both the Port, tug berths and the ferry and barge terminals, would be subject to obtaining subsequent Sea Dumping Permits.

Australia is a party to the *1982 UN Convention on the Law of the Sea* (UNCLOS) which provides the international framework within which Australia regulates its marine and coastal environment, including shipping. This framework is supported by a vast array of additional international treaty obligations and Australia's constitutional structure.

Within Australia the *Seas and Submerged Lands Act 1973* (Cth) vests all of the territorial sea in the Commonwealth, except those State waters that existed immediately before Federation. *The Coastal Waters (State Powers) Act 1980* vests within each State the power to make laws governing the adjacent ocean to their territory out to three nautical miles.

The UNCLOS sets out a general framework of internationally agreed responsibilities; Australia must permit innocent passage of foreign flag in the territorial sea, but may regulate environmental impact from ships in Australian waters. Shipping activities, as they impact on the marine environment, are generally governed by principles of international law, which the Commonwealth has given effect to under relevant national laws. The International Maritime Organisation (IMO) was established by Convention in 1958 for the purposes of encouraging cooperation in relation to the regulation of shipping, maritime safety etc. The IMO has 170 Member States, including Australia. There are over 30 IMO conventions that specifically relate to shipping and many are directed to regulation of the marine environment and marine pollution from ships. Australia is a party to most of them and they include:

- *International Convention for the Prevention of Pollution of the Sea 1954* (MARPOL);
- *International Convention for the Safety of Life at Sea 1974* (SOLAS);
- *International Regulations for Preventing Collisions at Sea 1972* (COLREGs); and,
- *International Convention on Oil Pollution Preparedness, Response and Cooperation 1990* (OPRC).

In addition, the IMO has developed an International Maritime Dangerous Goods (IMDG) Code as a uniform international code for the transport of dangerous goods by sea, which addresses matters such as packing, container traffic and storage (including segregation of incompatible substances). The key Commonwealth legislation for shipping, which gives effect to these conventions in Australian waters, includes:

- Navigation Act 2012 (Cth) and Marine Orders made under that Act regulates a multitude of ship-related activities including construction standard of ships, survey, ship safety, the coasting trade, employment of seafarers and shipboard aspects of the protection of the marine environment;
- Protection of the Sea (Prevention of Pollution from Ships) Act 1983 (Cth) regulates discharge of pollution from ships; and,
- Australian Maritime Safety Authority Act 1990 (Cth) establishes the Australian Maritime Safety Authority (AMSA). AMSA's objectives include promoting maritime safety and protecting the marine environment from pollution from ships and other environmental damage caused by shipping.

This legislation would generally apply to all Project-related shipping in Australian waters, unless specified otherwise within the legislation.

Under the *Great Barrier Reef Zoning Plan 2003* (Zoning Plan), commercial ships do not require a permit to transit through General Use Zones and Designated Shipping Areas. All Project-related shipping between the Project area and Gladstone or other Australian east coast ports would remain within the GBR Designated Shipping Areas. In this regard, the effect of section 43 of the EPBC Act is that approval is not required under Part 9 of the EPBC Act to authorise the proposed shipping activities within the

Designated Shipping Areas of the GBRMP. Shipping is defined by the *Great Barrier Reef Marine Park Regulation 1983* as any vessel 50m or more in overall length. For the purposes of compulsory pilotage under the GBRMP Act, a regulated ship is defined as a vessel that is 70m or longer in overall length.

This assessment has been conducted in accordance with the EPBC Act, including the principles of ecologically sustainable development (ESD). These principles are:

a) decision-making processes should effectively integrate both long-term and short-term economic, environmental, social and equitable considerations;
b) if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation;
c) the principle of inter-generational equity-that the present generation should ensure that the health, diversity and productivity of the environment is maintained or enhanced for the benefit of future generations;
d) the conservation of biological diversity and ecological integrity should be a fundamental consideration in decision-making; and,
e) improved valuation, pricing and incentive mechanisms should be promoted.

An explanation of how the Project is consistent with these principles in included in **Section 20.3** including the objective under the EPBC Act "to provide for the protection and conservation of heritage".

DSEWPaC will be responsible for endorsing or approving mitigation measures or monitoring programs for the Project as required under any approval provided under the EPBC Act or the Sea Dumping Act and in accordance with relevant statutory requirements or policies. This includes the Dredge Management Plans, which must also be approved by EHP and be prepared in consultation with DAFF (Port and river facilities) and NQBP (river facilities only).

2.7.2 Queensland

The Project was declared a “significant project” for which an EIS is required pursuant to section 26(1)(a) of the SDPWO Act on 21 November 2008, by the Queensland Coordinator-General. The declaration initiated the statutory environmental impact assessment procedure under Part 4 of the SDPWO Act.

The Coordinator-General issued a final Terms of Reference (ToR) for an EIS in April 2009 following advertisement for public and advisory agency comment on 16 January 2009 (Department of Infrastructure and Planning 2009). An EIS was prepared in response to the final ToR (RTA 2011) and advertised for public and advisory agency comment between 1 August and 12 September 2011.

At the request of the Coordinator-General, RTA prepared a Supplementary report to the EIS, addressing submissions received during the public comment period (RTA 2012). The Supplementary report to the EIS was released publicly on 9 February 2012.

Following assessment of the information provided in the EIS and Supplementary report and in consultation with the relevant referral agencies, the Coordinator-General released a report (the ‘CG’s Report’) on 23 May 2012 (Queensland Government 2012).

The CG's Report does not authorise the commencement of work associated with the Project. Instead it sets the framework within which other Queensland Government approvals are to be sought and the conditions for the prevention, minimisation and management of environmental impacts. The CG’s Report provides the following:

- for those parts of the Project where there is no relevant approval applicable under other legislation, conditions have been imposed and entities have been nominated for jurisdiction of the conditions by the Coordinator-General under section 54B of the SDPWO Act;
- stated conditions for applications for development approval under the SP Act that must attach to the development approval under section 39 of SDPWO Act. In addition the assessment manager may impose conditions not inconsistent with the conditions outlined in the CG's report;
- stated conditions for amendment to the environmental authority (ML) under the *Environmental Protection Act 1994* (Qld) (EP Act); and,
- recommendations (under section 52 of the SDPWO Act) for other approvals.

The draft amendment to the Environmental Authority for the Project was advertised from 15 October to 12 November 2012 and is currently being assessed. The CG's Report includes numerous monitoring, enforcement and review conditions, these are summarised in **Appendix 2-E**. The Report also identifies each entity with jurisdiction for each of the conditions, these are summarised in **Table 2-2**.

The full CG's Report is available at:
http://www.dsdip.qld.gov.au/resources/project/south-of-the-embley/south-embley-cg-eis-report.pdf.

Table 2-2 Entities with jurisdiction for Coordinator-General conditions

Condition no.	Topic	Entity with jurisdiction
Imposed conditions (Appendix 1)	General conditions for implementation and auditing of requirements of the CG Report	Department of State Development, Infrastructure and Planning (DSDIP)
Imposed conditions (Appendix 1)	Failure impact assessment of Dam C	DNRM
Imposed conditions (Appendix 1)	Fish passage and marine fish habitat loss	DAFF
Imposed conditions (Appendix 1)	Biomass recovery	DSDIP
Imposed conditions (Appendix 1)	Social conditions	DSDIP
Stated conditions (Appendix 3, Part A)	Development approvals (off-lease, on Strategic Port Land)	NQBP (assessment manager) and EHP
Stated conditions (Appendix 3, Part A)	Development approvals (off-lease, not on Strategic Port Land)	EHP
Stated conditions (Appendix 3, Part B)	Environmental Authority (on-lease)	EHP (DAFF and NQBP to be consulted on certain mitigation measures including dredging and coastal works).
Recommendations (Appendix 4)	Water licences	DNRM
Recommendations (Appendix 4)	Approvals for capital or maintenance works on State-controlled roads	DTMR

Further information on the relevant Queensland legislative framework is provided in Section 1.9 of the Queensland EIS (RTA 2011).

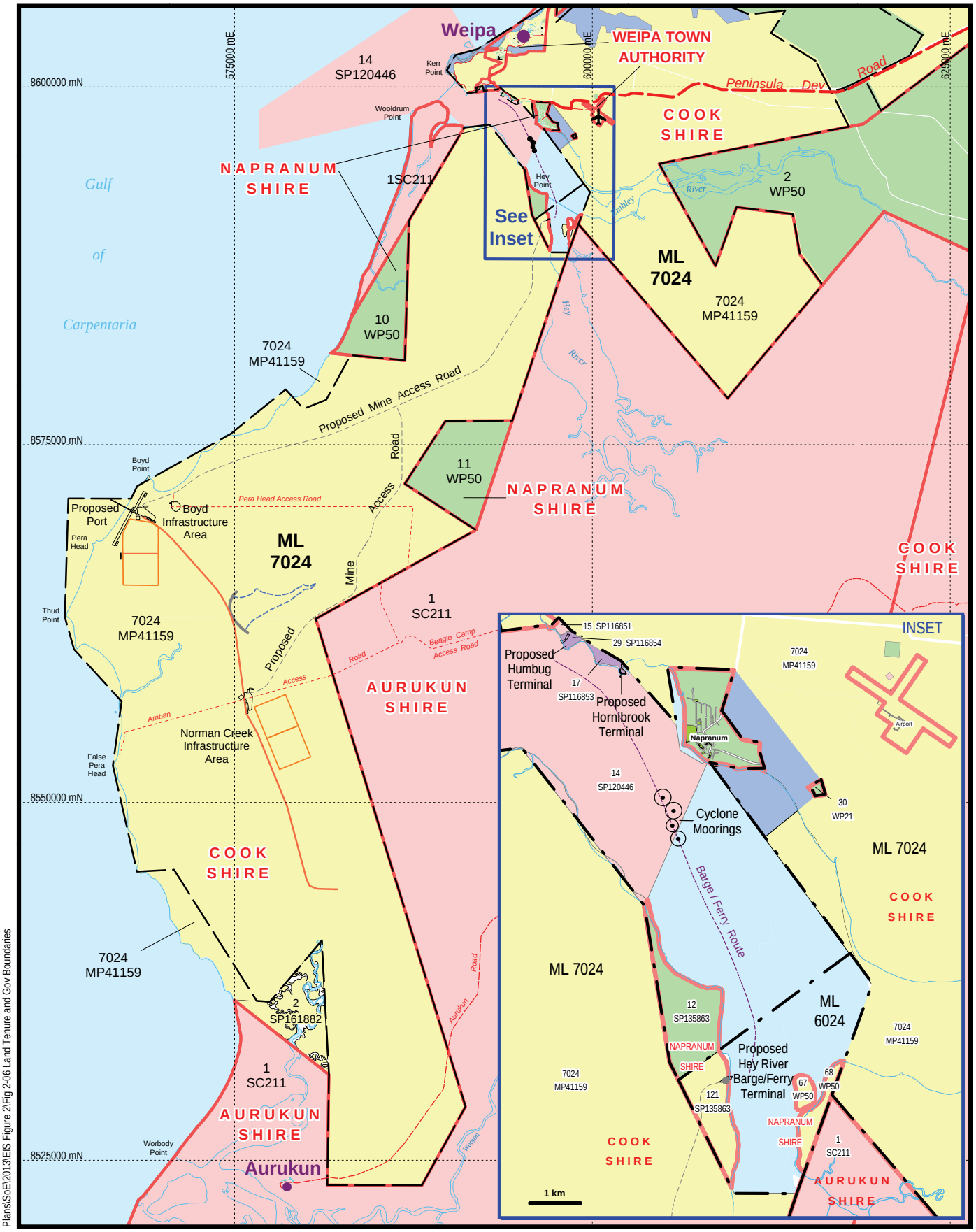
2.7.3 Local Government

The Project is located in the Cook Shire and the Aurukun Shire (refer to **Figure 2-6**). Under Schedule 4 of the SP Regulation, mining and mining-related development on mining leases is exempt from assessment against a planning scheme.

A very small amount of work (installation of water and sewerage services for the accommodation near Nanum) may be required in the Weipa Town Area.

The Weipa Town Area is excluded from the Cook Shire and is currently governed by RTA through the WTA by virtue of the provisions of the *Commonwealth Aluminium Corporation Pty Limited Agreement Act 1957* (Qld) (Comalco Act). Under clause 45 of the agreement scheduled to the Comalco Agreement Act, RTA is granted (subject to some exclusions) powers under the Local Government legislation.

The WTA has prepared an *Advisory Development Plan for Weipa Local Government Area* (WTA 1996). An application for approval for development that is required as part of the Project in the Weipa Town Area will be submitted to the WTA, if required. Similarly, an application for approval for development within the Cook Shire or Aurukun Shire would be submitted to the relevant Council, if required.



Plans\SoE\2013\EIS Figure 2\Fig 2-06 Land Tenure and Gov Boundaries

Rio Tinto Alcan

RTA Mining Lease boundary
Shire Boundary
Weipa Airport
Road/track
Barge / Ferry route

Tenure
Freehold
Lands Lease
Deed of Grant in Trust
State Land
In Process of Relinquishing Mining Lease

South of Embley Project

Fig. 2-6: Land Tenure and Local Government Boundaries

N

5 0 5km

Datum/Projection: GDA94/MGA Zone 54 Date: 26/02/2013