EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

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EXECUTIVE SUMMARY

1 DEFINITIONS

In this Supplementary Executive Summary unless otherwise provided or unless the subject matter is inconsistent the expressions following (whether appearing with or without capital letters) shall have the meanings respectively assigned to them.

"ARC" means Architectural Review Committee;

"CBD" means the Central Business District of Townsville;

"BICA" means the Breakwater Island Casino Agreement Amendment Act 2006;

"CEMP" means Construction Environmental Plan;

"CMS" means Community Management Scheme;

"Council" means Townsville City Council;

"Development" means mixed used development proposed to be developed directly opposite the Port of Townsville and adjacent to the existing Jupiters Townsville Hotel and Casino Complex, which upon completion will consist of:

- A cruise ship terminal (TOT);
- An integrated residential waterfront development known as Breakwater Cove, consisting of:
  - 200 detached dwelling sites with access to private marina berths;
  - Approximately 500 units (multiple dwellings);
  - 460 marina berths of which 10 will be able to accommodate 'super yachts';
  - Approximately 1,500m² of retail and commercial space;

"DEWHA" means the Federal Department of the Environment, Water, Heritage and the Arts;

"DIP" means the Department of Infrastructure and Planning;

"DMR" means the Department of Main Roads;

"DNRW" means the Department of Natural Resources and Water;

"DPI&F" means the Department of Primary Industries and Fisheries;

"DSTE" means the Design Storm Tide Event;

"EIS" - means Environmental Impact Statement;

"EPA" means the Environmental Protection Agency;

"ERA" - means Environmentally Relevant Activity;

"Ergon" means electricity provider Ergon Energy;

"ESD" means Environmental Sustainable Development;

"Executive Summary" means the original Executive Summary document in the EIS document and any schedules, appendices or attachments;

"FDA" means the Future Development Area defined in the BICA;

"IPA" means Integrated Planning Act;

"Port" means the Port of Townsville;

"PPA" means Port Protection Agreement;

"PPC" means Port Protection Codes;

"Preferred Developer" means TABCORP/Consolidated Properties;

"Proponent" means City Pacific Limited;

"TOT Project" means the proposed Townsville Ocean Terminal and associated Development including Breakwater Cove;

"SCL" means Surplus Casino Land;

"SEIS" means Supplementary Environmental Impact Statement;

"State" means the State Government of Queensland.

"TEC" means Townsville Entertainment and Convention Centre;

"TCC" means Townsville City Council;

"TMBYC" means Townsville Motor Boat Yacht Club;

"TPA" means Townsville Port Authority;

"TSP" means Total Suspended Particulate; and

"TOT" means the proposed Townsville Ocean Terminal and associated Development;

PART A: BACKGROUND AND OVERVIEW

2 BACKGROUND

This Supplementary Executive Summary should be read in conjunction with the SEIS Report and Supporting Material. The SEIS was requested by the State to address the issues raised by the State and other Government Agencies during the Public Notification period of the EIS. The SEIS is therefore part of the EIS process.

3 OVERVIEW

The integrated TOT Project is a Project of State Significance.

It has the following parts:

- TOT Precinct;
- The Breakwater Cove Precinct; and
- Material transport during construction;

Together with being located in close proximity to the Port and the Jupiters Casino complex.

The TOT Project:

- Will deliver major economic and social benefits to North Queensland and the State well into the future;
- Is compatible with the existing and future development and operations of the Port, which are to be protected through a Port Protection Agreement (PPA);
- Will not be adversely affected by noise and air emissions from existing and future port operations, with appropriate mitigation measures;
- Does not generate significant long term adverse traffic impacts on the Townsville road network;
- Can be constructed without adverse impact on water quality or the marine environment;
- Will fairly contribute to the infrastructure costs of the City;
- Does not adversely impact the marine environment;
- Does not disturb areas of indigenous cultural heritage significance; and
- With implementation of the recommended mitigation measures identified through the EIS will ensure that the long-term economic and social benefits of the TOT can be realised without undue risk to environmental, social and cultural values of the TOT Project area, Townsville and the North Queensland environs.

The TOT Precinct, developed by the Proponent and to be operated by the Port, delivers:

- An important infrastructure requirement of the blueprint for cruise tourism development in the State – as set out in the State's Cruise Shipping Plan 2003;

- Estimated economic impacts of up to $4.7 million in value added each year into the North Queensland economy;
- 55 full-time equivalent jobs subsequent to completion, to complement the 1,900 full-time equivalent jobs expected to be created during its construction; and
- A catalyst to growth in marine-based industries including eco-cruise tourism in the region.

The Breakwater Cove Precinct delivers:

- 700 ocean-front marina residential/multi dwellings, which will further enhance Townsville's reputation as a desirable residential destination and expand on its enviable reputation as a relaxed and confident city;
- 450 private and marina berths, which meet an evident need for such facilities in Queensland;
- 10 dedicated superyacht berths, which will strengthen Townsville's maritime credentials and global reputation in this rapidly growing sector;
- Public open space amenities, including fishing piers, to complement The Strand Precinct; and
- Retail and restaurant offerings for residents and visitors.

The Ocean Terminal is only possible and feasible as part of an integrated TOT Project that includes the Breakwater Cove Precinct.

The TOT Project delivers significant outcomes consistent with the State's key directional priorities. In particular the TOT Project:

- Protects the environment for a sustainable future through best practice construction methods, promotion of sustainable cruise tourism and adoption of a range of Ecological Sustainable Development initiatives as part of the Building Codes;
- Grows a diverse economy and creates jobs;
- Delivers responsive government through active community engagement through the EIS process and beyond;
- Improves health care and strengthens services to the community through fostering active and healthy lifestyles;
- Realises the Smart State through adoption of best practice construction methods and on-the-job skills training;
- Enhances community safety through: reduced accidents, emergencies and disasters and "safety through design"; and
- Manages urban growth and builds the State's regions through investment in regional urban and economic infrastructure and promotion of cruise tourism;

Potential risks to future port development and compatibility with the Port have been proactively addressed by the Proponent throughout the EIS process in a way that ensures no impediment to the continuing operation of the Port.

Issues such as noise, vibration, air quality and traffic impacts have all been assessed in detail in the EIS and the SEIS and mitigation strategies have been recommended for adoption by the Proponent.

4 CHRONOLOGY

Given the passing of time since the EIS was released, the Proponent details a Chronology of events to the present below:

- In 1998 a number of studies were carried out which would eventually be integrated to form the basis of the Townsville CBD Masterplan;
- The Townsville CBD Masterplan includes the Townsville Ocean Terminal Study (copy attached at APPENDIX ONE);
- The Townsville CBD Masterplan was released by Council in June 2002 as a blueprint for the revitalisation of the Townsville CBD and included an area known as the "Breakwater Precinct" which incorporated the following uses:

  a) Ocean/Cruise Ship Terminal;

  b) Marina; and

  c) Mixed use commercial, residential, retail and hospitality precinct.

- In 2002 the Port commissioned a design for an Ocean Terminal and adjacent residential development in the Breakwater Precinct;
- In 2004, following the receipt of two (2) unsolicited development proposals, the State commissioned an investigation into the viability of an Ocean Terminal and a process of selecting a Preferred Developer;
- On 13 September 2005 following viability studies by the State, the development of the TOT Project was endorsed together with an announcement that negotiations would begin with the Preferred Developer for the TOT Project;
- On 10 March 2006, the State and the Preferred Developer entered into a Development Agreement;
- On 15 March 2006, the State passed the amendments to BICA;
- BICA amended the 1984 legislation which provided for the development of the Townsville Breakwater and Casino precinct. While the initial reclamation did not extend beyond the Casino precinct the development of the area seaward of the Casino was always envisaged - this area was defined in the BICA as the FDA;
- In June 2006, contractual agreements were executed between the Preferred Developer and the State to develop the FDA including the TOT Project;
- On 26 October 2006, the TOT Project was declared to be a Project of State Significance under Section 26 of the State Development and Public Works Organisation Act 1971 (SDPWOA);
- Copy of the Gazettal Notice is attached at APPENDIX TWO;
- The declaration of the TOT Project as a Project of State Significance initiates the statutory environmental impact assessment procedure of Part 4 of the SDPWOA which requires the preparation of an EIS;
- An EIS is required for the TOT Project to identify potential benefits and adverse impacts on the social, economic and ecological environments associated with the TOT Project;

- In March 2007, the State released the TOT Terms of Reference (ToR) for an EIS;
- The EIS must address the ToR which provides the framework for the EIS generally in relation to:

  a) Information and advice on the preparation of the EIS; and

  b) Content of the EIS.
- In May 2007, the Townsville City/Port Strategic Plan was released as a draft to detail the relationship between the CBD revitalisation, the continued development of the Breakwater Precinct (including the TOT Project) and the future expansion of the Port;
- On 29 November 2007, the State directed that the EIS be released for public scrutiny and comment;
- On 29 November 2007, a Strategic Plan was released to define the Townsville Economic Gateway and development within the CBD generally by Council, the Port and the State;
- On 1 December 2007, the public notification period of the EIS commenced with a Public Notice appearing in State, Local and National Papers providing details of inspection and availability of the EIS and how to make a submission;
- The public notification period concluded on 1 February 2008;
- 141 submissions were received during the public notification period from individuals, Stakeholders, State Government Agencies and the Commonwealth;
- A list of the Stakeholders and Government Agencies that made a Submission is attached at APPENDIX THREE;
- On 13 March 2008, the Proponent received direction from the State requesting a Supplementary EIS be prepared addressing all relevant matters raised by the State Agencies, the TPA, the TCC and DEWHA;
- Copy of the State direction is attached at APPENDIX FOUR.

5 TOWNSVILLE ECONOMIC GATEWAY AND TOWNSVILLE CITY/PORT STRATEGIC PLAN

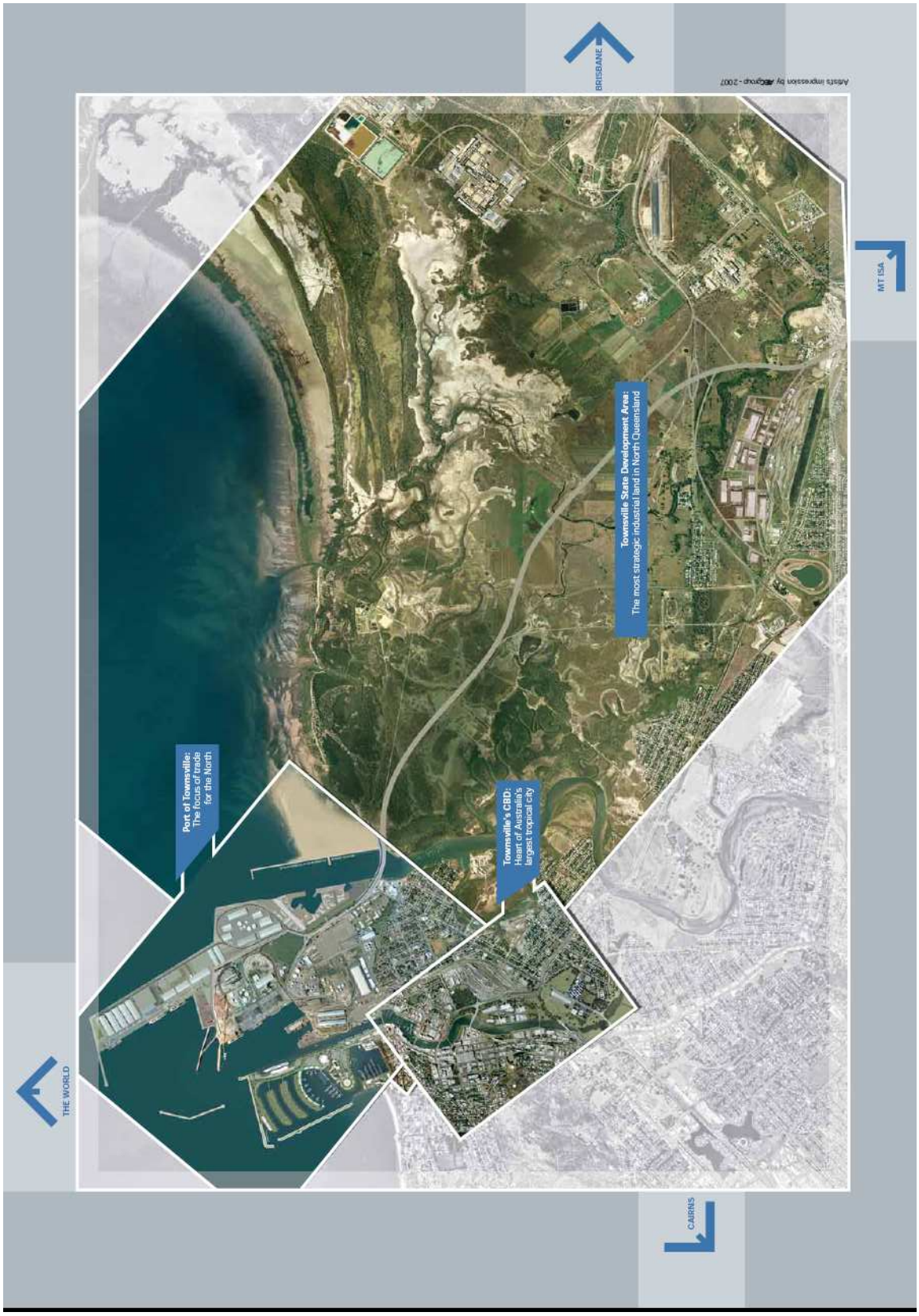
To provide support to the concept and location of the TOT it is of note that the Townsville Economic Gateway and the Townsville City and Port Strategic Plans were released in May and November 2007 respectively.

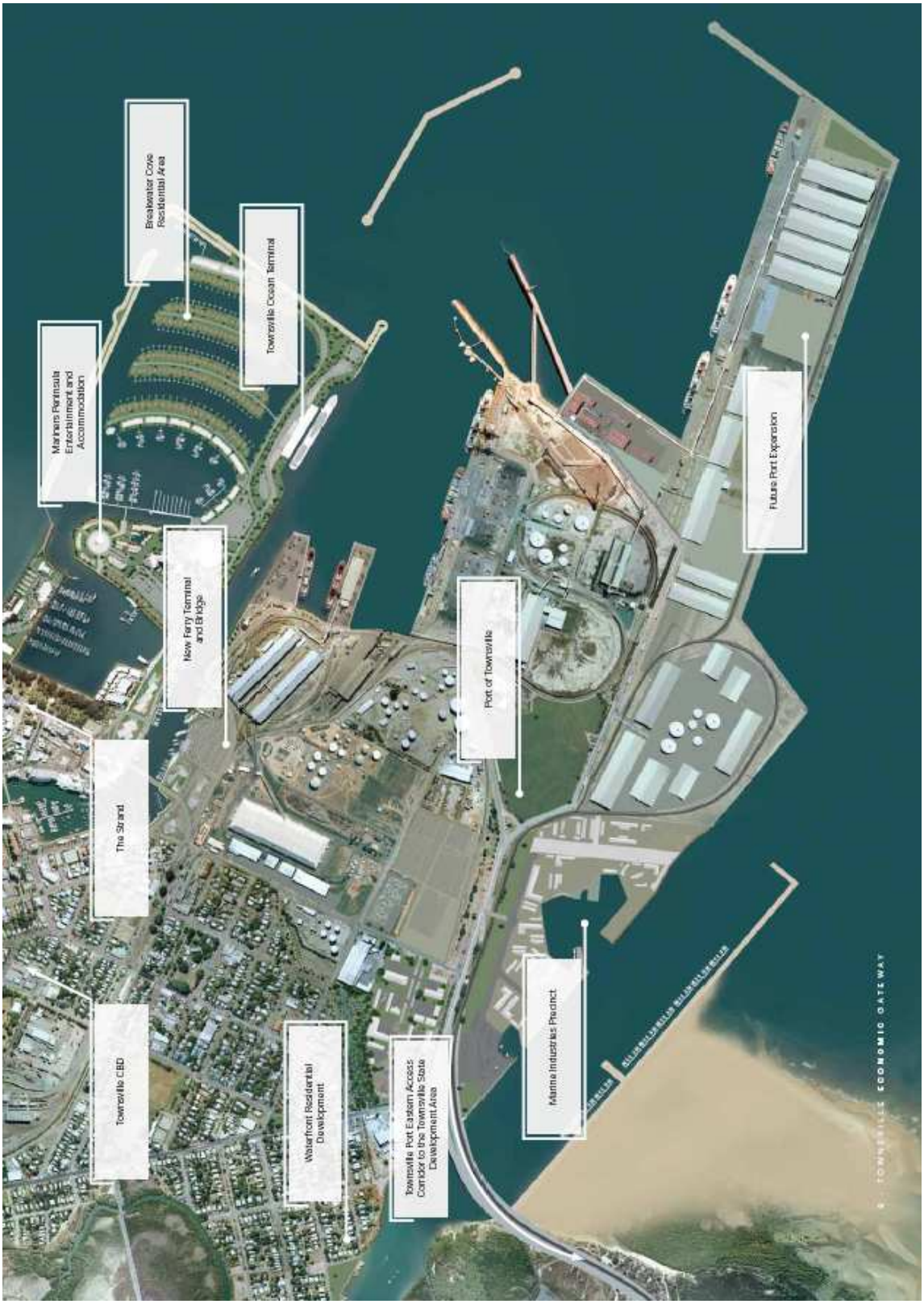
5.1 Townsville Economic Gateway

The Townsville Economic Gateway evolved from a series of studies undertaken from 1997 to the current day. The Plan includes/illustrates/describes the TOT Project.

The Townsville Economic Gateway, extracts from which appear on the following 2 pages, provides a recent strategic vision for the TOT Project which integrates the complex interests of a diversified Townsville economy – balancing economic, social and environmental outcomes, together with recognition of the inseparable links between the CBD, industry, and the wealth creating trade that drives them together.

The TOT Project is a key component of the Townsville Economic Gateway vision.


BRISBANE
MT ISA
CAIRNS
THE WORLD
Townsville State Development Area:
The most strategic industrial land in North Queensland
Townsville's CBD:
Heart of Australia's largest tropical city
Port of Townsville:
The focus of trade for the North


Breakwater Cove Residential Area
Townsville Ocean Terminal
Mariners Peninsula Entertainment and Accommodation
Future Port Expansion
New Ferry Terminal and Bridge
Port of Townsville
The Strand
Townsville CBD
Waterfront Residential Development
Townsville Port Eastern Access Corridor to the Townsville State Development Area
Marine Industries Precinct
TOWNSVILLE ECONOMIC GATEWAY

5.2 Townsville City/Port Strategic Plan

The Townsville City/Port Strategic Plan (draft) was developed by the State, Council and the Port in 2005 to 2007, with its objective to provide a shared vision which decision makers from the State Government Agencies would use to guide development. The aim is to achieve an effective and sustainable development/expansion of the Port and the CBD. The Strategic Plan is designed to draw attention to the challenges and to set goals rather than define future development.

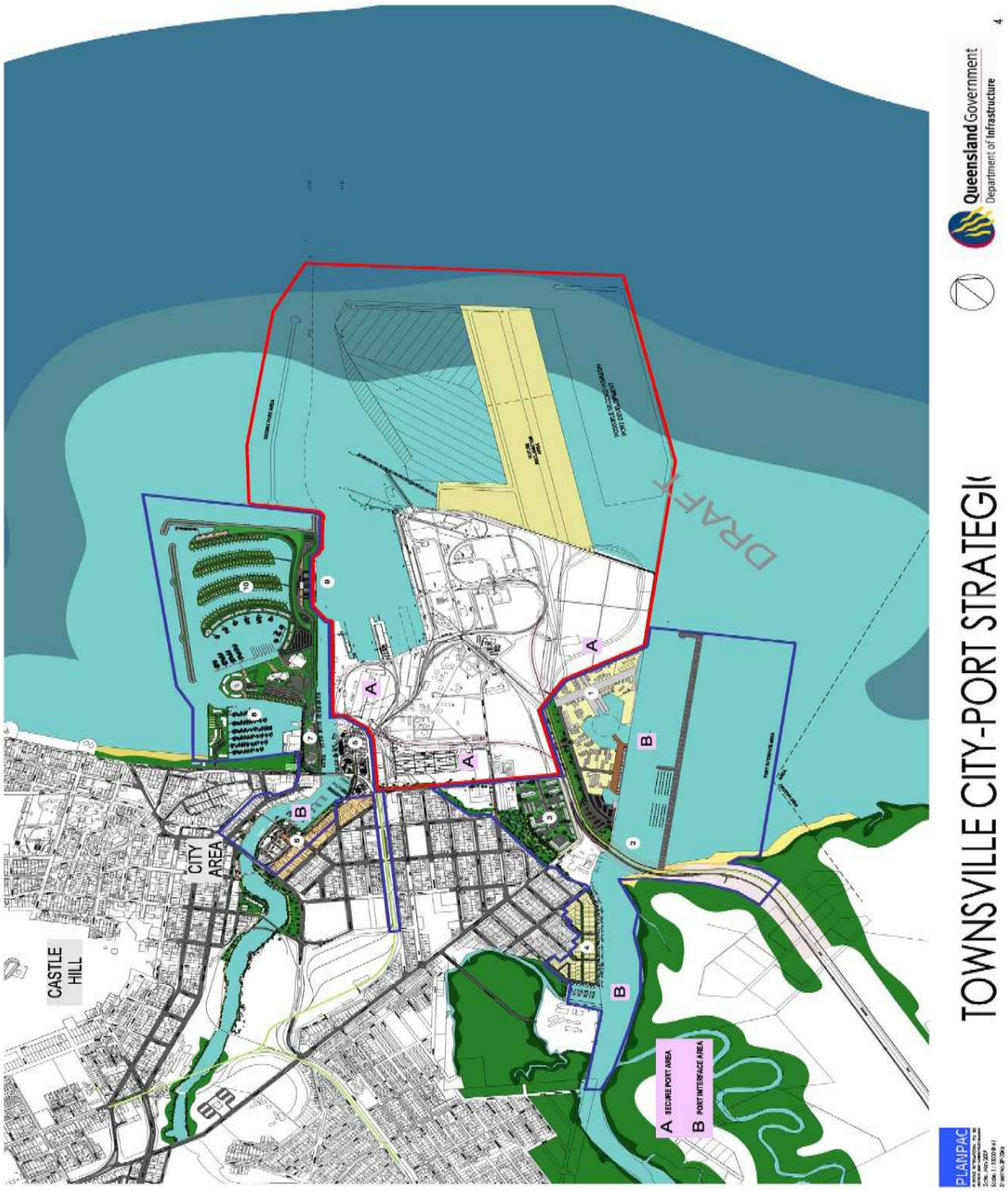
The Plan identifies land within the vicinity of the Port and defines the parcels as:

- Secure Port Area - Area A;
- Port Interface Area – Area B;
- Port Masterplan – Planned Port Expansion;
- Precincts 1 – 10.

Precincts 9 and 10 of the Plan incorporate the TOT Project, eg:

- Precinct 9 – TOT is identified as an area reserved for a “proposed facility for receiving and servicing cruise ships and visiting naval vessels”. It further notes that the proposal is currently undergoing an EIS.
- Precinct 10 – Breakwater Cove is identified as an area for “an integrated residential and tourism development on approximately 80 hectares of land presently under tidal water”. The proposal is noted as currently undergoing an EIS and that the development of the Precinct is regulated under the BICA.

Images appearing on the next two (2) pages, extract from the Plan, clearly identify the TOT Project – including Breakwater Cove, as well as the Strand Bridge.


TOWNSVILLE CITY-PORT STRATEGI
Queensland Government
Department of Infrastructure
DRAFT
CASTLE HILL
CITY AREA
A SECURE PORT AREA
B PORT INTERFACE AREA
PLANPAC


DRAFT
BREAKWATER COVE, OCEAN TERMINAL
& SURPLUS CASINO LAND PRECINCTS
Queensland Government
Department of Infrastructure
16
N
10
9
8
CRUISE SHIP
ROSS CREEK
STRAND BEACH

6 TOT PROJECT DESCRIPTION

The TOT Project remains the same as detailed in the EIS although some of the construction methods used by the Proponent to deliver the TOT Project have been refined having regard to the issues discussed in the SEIS.

7 TOT PROJECT PROPONENT

The TOT Project continues to be a joint venture between TABCORP and the Proponent under contractual arrangements as set out in the Development Agreement with the State.

8 LEGISLATIVE FRAMEWORK

The legislative framework for the TOT Project and the EIS process remains the same as described in the EIS.

9 APPROVAL PROCESS

There are several stages that define the approval processes required for the TOT Project. The SEIS submission marks a milestone relatively early in the overall approval process.

Following the sign off of the EIS and the SEIS by the Coordinator General of the State, and the approval under the EPBC Act, the FDA Scheme will be finalised for approval by the relevant Minister – only then can the required Development Applications be made by the Proponent to the Council.

Many of the issues raised by submitters are relevant to be addressed at the development application stage rather than at this formative EIS phase.

PART B: THE SUPPLEMENTARY ENVIRONMENTAL IMPACT STATEMENT

10 ISSUES ARISING FROM SUBMISSIONS RECEIVED AFTER PUBLIC NOTIFICATION OF EIS

A number of issues were raised in the Submissions received after the public notification period of the EIS.

The State provided a brief of matters to be addressed by the Proponent in the SEIS and these are addressed in Volume 1 Part B entitled "Supplementary Environmental Impact Statement Report".

The technical issues raised by the submitters are covered by the Proponent in the SEIS Report in Volume 1 Part B, the detail for which is addressed and contained in Volume 2 Expert Reports.

The Submissions raised a range of matters which are summarised into the following key issues which require clarification/comment by the Proponent to conclude the EIS process:

1. Compatibility with the Port;
2. TOT Project's impact on Council's Infrastructure;
3. Construction of TOT Project impacts on the Townsville Community;
4. TOT Project impacts on the Coastal Environment; and
5. Social and Economic Benefits of the TOT Project.

It is these issues which are addressed in detail in the SEIS.

11 COMPATIBILITY WITH THE PORT

The Port has been in operation for over 110 years. It provides a significant contribution to the Northern Region of the State economy in terms of value add and employment.

The TOT Project complements the Port and enhances its facilities and infrastructure. The TOT Project does not compromise the Port's expansion now or in the future, nor does the Port impact on the amenity of residents of Breakwater Cove.

The Breakwater Cove residential and marina precinct is only possible because the Port is achieving excellence in environmental management outcomes. Independent assessments undertaken as part of the EIS and SEIS confirm that:

- The Port (including Port users) are achieving environmental emission outcomes that are generally well within acceptable environmental nuisance and health standards;
- Infrequent instances of excessive noise levels and odour can be managed and mitigated through practical design remedies within Breakwater Cove dwellings;
- The expected levels of dust exposure in the Breakwater Cove are comparable to measured levels experienced in other residential areas in the State, including Brisbane and other parts of Townsville like Archer Street (South Townsville), Virgil Street and Cambridge Street (Vincent). The exposure of residents to noise emissions generally fall within acceptable criteria and are comparable to levels experienced elsewhere in Central Townsville suburbs.

- Townsville residents have already shown a strong desire to live in close proximity to the Port. The above-average prices achieved for residential dwellings along the Strand and in the Breakwater Marina precinct as well as in South Townsville is evidence of the desirability of these locations to the Townsville Community.

If the Port has been an undesirable feature within Townsville's urban landscape, the level of public complaint activity about the Port would be higher. In reality, recorded data on residential complaints show that since 2001, there has been each year an average of 0.54 complaints per 1,000 persons living in close proximity to the Port in relation to noise, dust and traffic issues.

This translates to a total of 84 amenity-related complaints in the past 7 years (Sourced from Port Records).

A breakdown of amenity-related complaints identifies 8 of the 84 made in the past 7 years were from the Strand Precinct (i.e. to the west of Ross Creek in the vicinity of the TOT Project) whereas some 51 were from South Townsville. Of those from the Strand Precinct, 3 related to noise, 2 to rubbish, and one each about "trees growing near their land", light from a research vessel in Ross Creek and so-called "black dust".

EPA data on Port related complaints confirm that there have been relatively few in recent years. According to the EPA, in the past 24 months there have been 5 complaints about noise from residents in the South Townsville and CBD areas, 4 complaints about odour from South Townsville residents and about 20 complaints about (black) dust from residents living in South Townsville, the CBD, North Ward, West End and Castle Hill/Yarrawonga.

The Port has long been a feature of Townsville, and this is reflected in that local residents not only accept its existence but actively embrace it as a contributor to Townsville's overall quality of life.

The TOT Project will complement the Port's existing berth infrastructure. That it is likely to add to the Port's capabilities and improve its operational flexibility is reflected in the support the Port has shown towards the TOT cruise facility over several years.

Notwithstanding the above, to ensure that the Breakwater Cove precinct poses no risk to the Port, the Proponent has worked with State Departments to develop a robust Port Protection Agreement. Refer to the Port Protection Strategy document included in this SEIS (Volume 1, Part E) for details of these unique land use planning measures. This is consistent with the Port's commitment as summarised in its 2006-07 Annual Report, which states:

> *The Port is working closely with the Proponent and the State to ensure that adequate port protection mechanisms are in place for the Breakwater Cove residential development which will be located adjacent to the TOT Project. These mechanisms, which will closely reflect those agreed for residential developments surrounding the Breakwater Marina, will ensure that residents are aware of potential amenity impacts, that building design appropriately addresses impacts and that legal protections are in place to safeguard the ongoing operations and growth of the Port (p. 20 – emphasis added).*

The EIS and the SEIS have considered the impacts the Port and other nearby land users would have on the TOT Project. The only land use which has the potential to impact the TOT Project is the Port. The critical issue is whether emissions from the Port such as dust, noise, odour and light would represent a public health risk or if the resultant level of disamenity would render the Breakwater Cove area unfit for its intended use.

In the preparation of the EIS and SEIS numerous investigations were undertaken by the Proponent to establish as accurately as possible the nature of the Port's emissions. With the variety of activities in the Port and the fact that many activities are spasmodic, a monitoring programme was undertaken over many months to capture a representative range of emissions. The investigated emissions were analysed by the Proponent under the following categories:

11.1 Noise

The EIS included the results of an initial investigation and further supplementary investigation to capture particular activities at the Port. The results indicate that peak noise levels in the TOT Project would typically be around 70db, comparable to inner city urban environments in Townsville or Brisbane.

The particular activity of scrap metal loading was not considered in the EIS. Subsequently, a Noise Consultant undertook a specific monitoring of scrap metal loading when an opportunity arose in June 2008 and found the noise levels to be as reasonable as the theoretical analysis had predicted (< 75db maximum peak levels).

The SEIS makes it clear that the noise emissions expected from the Port are not extraordinary and as with development along major roads and railway lines, with appropriate mitigation measures such as double or thicker glazing, residents within Breakwater Cove would be able to enjoy an appropriate level of amenity during the infrequent occasions when exceedances occur.

The Noise Consultant believes that with noise levels generally at acceptable levels, the focus going forward is to ensure the mitigation measures to deal with the infrequent exceedances are covered in the proposed Port Protection Codes.

11.2 Air Quality

The Air Quality Assessment in the EIS canvassed 3 aspects of the dust coming from the Port:

- The amount of dust that could expect to be deposited in the TOT Project;
- The amount of air borne dust that might blow across the TOT Project; and
- The metal content of the dust.

Through a combination of the EIS monitoring, additional monitoring done for the SEIS, other tests by the Port and the EPA and modelling undertaken to enable predictions to be made in relation to lead levels, the SEIS has clearly demonstrated that nuisance dust levels are within acceptable levels and there are no health concerns.

The Air Quality monitoring report in the EIS took place over 9 months from November 2006 to July 2007. The results of a further 3 months are recorded in the Supplementary Deposited Dust Report, therefore covering a total of 12 months monitoring. Isolated vandalism of some sample collections occurred during the monitoring program and those samples were lost. The unspoiled monitoring results showed a consistent pattern of low dust levels throughout the period.

This is further supported by the consistent results for the sites for which 12 months results were obtained. In the Supplementary Deposited Dust Report the results of the whole 12 months of monitoring have been favourably compared with results from other monitoring programmes in residential areas in Brisbane and Townsville. Dust levels recorded were in the range of 3 to 88mg/m^2/day, well within the EPA standard of 120mg/m^2/day.

In regard to the air borne dust that might pass across the TOT Project site, the results of PM_{10} monitoring done by the Port at Berth 10 (the closest berth to the TOT Project site at approximately 150m) and TSP monitoring done by the EPA at the Coast Guard carpark a few hundred metres south of the TOT Project site, were analysed and discussed in more detail in the Supplementary Particulate Dust Report. The results of the PM_{10} and TSP monitoring show that at both locations the air borne dust levels are within the established acceptable ranges.

The metals content analysis of the deposited dust has been considered following on the analysis of a single round of investigation of the August 2007 deposition sample. The results for the casino carpark station and Jezzine Barrack show the lead content levels were 0.104 and 0.038 mg/m^2/day respectively. Both were well within the acceptable criteria. Further modelling of metals emission from the BHP lead oxide loading facility show that lead concentrations at the TOT Project and other residential areas close to the Port fall well below the Environmental Protection Air Policy criteria.

Odour from live cattle exports may continue to cause nuisance as it does now to the City at large. The low frequency of cattle loading however is expected to result in few complaints consistent with the current situation.

The Air Quality Assessment incorporated continuous monitoring of gaseous concentrations of oxides of nitrogen, sulphur dioxide and hydrocarbons over a three month period on Berth 10 in the Port. The results were all found to be within the relevant air quality goals and criteria.

11.3 Light

Light emissions from the Port have been reviewed by a consultant. The consultant's opinion without the benefit of a full study, is that the light sources could be better shaded and directed, but were consistent with light levels from street lighting in suburban areas.

12 TOT PROJECT ALTERNATIVES

A number of TOT Project alternatives were assessed to determine the preferred TOT Project configuration. These remain the same as documented in the EIS.

13 CITY INFRASTRUCTURE

An Energy Masterplan has been developed to enable the provision of low voltage power reticulation to each dwelling in the Breakwater Cove Precinct and to service the Ocean Terminal. Site lighting has been designed in accordance with relevant Australian standards.

The impact on traffic and transport and on the provision of potable water and waste water collection systems is discussed below.

13.1 Traffic and Transport

Existing land-based transport infrastructure affected by the TOT Project during and post construction has been further investigated.

The development of the FDA was anticipated in the original 1984 legislation which also enabled the Casino and the Breakwater Development. Council has also and separately planned for a bridge across Ross Creek on the alignment of the Strand as a long term measure to alleviate the future traffic congestion in the CBD.

Council submits the TOT Project triggers the construction of the Strand Bridge and that the Proponent should therefore cover the cost of that initiative and associated traffic management works. This is contrary to Council's Town Planning Scheme Policy and is not supported by traffic modelling undertaken by the Proponent.

The modelling by the Traffic Consultant clearly shows that with continued growth in traffic volumes over the next 20 years, a consequence of a vibrant growing city, including continued redevelopment of the CBD (which has been actively promoted by Council for over a decade), traffic volumes along Denham Street will exceed capacity by 2025 if not well before. This is acknowledged by Council's traffic consultant in its submission. Congestion at the Denham Street/Flinders Street East (FSE) intersection is predicted to result in intolerable delays during peak hour in both the morning and the afternoon without the TOT Project. The intersection is problematic now with lengthy delays before and after large events at the Townsville Entertainment and Convention Centre.

The TOT Project will not be a high generator of traffic. Breakwater Cove will contribute to traffic congestion on the northern side of the CBD. According to the Traffic Consultant, the traffic generated by the TOT Project will be less than 4000vpd.

Jupiters Townsville Hotel and Casino and surrounding residential development on the existing Casino Peninsula, together with the Townsville Entertainment and Convention Centre will generate nearly 8000vpd excluding major events. The 4 lane Sir Leslie Thiess Drive which services this Breakwater is more than adequate to service the planned developments.

The traffic generated by all development in the Breakwater Precinct will add to the saturation of the Denham Street/FSE traffic intersection in line with similar impacts by all the other redevelopment in the CBD.

Council's planning for the Strand Bridge is the logical solution and all development in the CBD/Breakwater which contributes to the congestion of the Denham Street/FSE intersection should be contributing to its construction.

The Proponent is prepared to pay its share towards the Strand Bridge and reasonably expects that this cost will be equitably distributed amongst all those who contribute to its need both currently and in the future.

13.2 Water and Wastewater Supply

The TOT Project will connect to the local water supply and wastewater service, with these services already available to the Breakwater Precinct.

The TOT Project will generate a need for augmentation of the water supply system. As is the case with all new developments, storage dams treatment plants, reticulation reservoirs and the trunk mains which link these to the local reticulation mains will all require upgrading over time to keep pace with a growing population in the Breakwater Precinct.

Councils have been charging developers for this augmentation work in accordance with the evolving statutory provisions which have expanded the scope of the infrastructure items which could be charged for. These charges are collectively known as "headworks contributions".

In addition to paying the headworks contribution, the Proponent will provide the reticulation mains within the TOT Project and to connect to the nearest trunk main.

Costs associated with infrastructure augmentation and attributable to the TOT Project will be paid by the Proponent. Infrastructure outside the TOT Project will be contributed to by the Proponent where appropriate on a fair and equitable basis. An Infrastructure Agreement to cover this issue is to be negotiated between the Council and the Proponent.

14 CONSTRUCTION

Construction of the TOT Precinct on reclaimed land is expected to take place over three (3) years. The construction of residential dwellings is not expected before 5-8 years.

The construction methodology for the TOT Project uses sources of fill from the site to minimise the import of fill material for the reclamation. The new Strand breakwater will be constructed from imported rock material and additional temporary sea walls will seal the TOT Project site within the existing breakwaters and the new Strand breakwater. The TOT Precinct site will then be drained and the land platforms and waterways created. This basic methodology has not changed and has significant benefits in terms of minimising impacts on the surrounding marine environment and also expedites the construction process.

Construction of the precinct will generate impacts in terms of:

- Demand for labour and skills;
- Demand for accommodation for migratory workers; and
- Usage of local road infrastructure and additional infrastructure to haul rock materials to the site.

14.1 Demand for Labour

The TOT Project is expected to generate 1,900 full-time equivalent jobs during construction. Many of these will be filled locally. It is nevertheless likely that a proportion is likely to be filled by workers temporarily moving to Townsville to take advantage of the employment opportunities.

14.2 Impact on Accommodation

Between 680 and 850 vacancies will be filled by migrant workers during the construction stage, with a peak of between 490 and 620 in the second and third years. This translates into possible demands for 246 to 620 dwellings in the Townsville area.

Townsville has a significantly under-utilised short-term (holiday) accommodation sector, with sufficient capacity to meet this additional demand. The TOT Project will not need to provide or facilitate any additional accommodation specifically to accommodate this itinerant workforce. However, the Proponent will actively work with local employment service providers to maximise local employment and minimise demand for additional accommodation.

14.3 Impact of Material Haulage to Site

The TOT Project will require significant rock and fill materials for the construction of the breakwaters and bunds. An estimated 1,000,000m^3 of armour rock and crushed rock will be needed. The materials will be supplied from local quarries. The preferred haulage route involves a temporary bridge across Ross Creek, to enable direct truck access to the TOT Project site.

A bridge management plan will be implemented that will give priority to vessels travelling on Ross Creek. Given existing and anticipated vessel movements up and down Ross Creek, and a bridge design that enables an opening-and-closing cycle to be achieved within a few minutes, the proposed temporary bridge is extremely unlikely to materially impact on boat usage of the Creek.

As an alternative to the temporary bridge, the option of barging the trucks back and forth across the creek to the site has been considered in the SEIS. Discussions with the Port and the State Regional Harbour Master have confirmed that this option is possible and two barge landing ramp locations have been identified and preliminary designs completed. The barging option has an advantage over the bridge in that noise on the Strand and Sir Leslie Thiess Drive is minimised.

15 TOT PROJECT IMPACTS ON THE COASTAL ENVIRONMENT

The SEIS has fully investigated the potential impacts on the coastal environment. The issues are as follows:

15.1 Design Storm Tide Event (DSTE)

Typically along the coast the design standard is for 100 year events. This is the standard required by the EPA and currently required by Council for other developments in the Breakwater Precinct. In accordance with State Policy (EPA) in determining the 100 year DSTE, an allowance has been made in accordance with EPA policy for climate change effects which may increase the frequency and intensity of storms. The DSTE envisaged for the TOT Project is not a "minimum design level" but a sensible and reasonable response to current regulation.

15.2 Strand Beach Erosion

The Breakwater will be extended and this will create a different wave action along the Strand Beaches which is expected to slightly change the alignments of the Strand Beaches. The TOT Project Coastal Engineering Consultant has confirmed that the impacts will be so minor as to be unnoticeable to the casual observer given the natural fluctuations in the Strand Beach alignment. They also confirm that the capability of the Strand Beaches to act as a buffer against storm/cyclone wave action will not be compromised.

15.3 Long Waves

The possibility of long waves in the expanded Port with the Ocean Terminal berth causing harbour resonance concerns has been considered by the Coastal Engineering Consultant and its likelihood is not supported by available evidence.

15.4 Coastal Management Policy

The EPA raised a number of possible conflicts with the Queensland Coastal Management Plan (Coastal Plan) adopted under the *Coastal Protection and Management Act*.

If there were any conflicts with Coastal Policy then in accordance with the legal acronym "*specialia generalibus derogant",* or specific words modify general words, the provisions of the BICA would prevail.

15.5 Water Quality

Baseline studies will be continued by the Proponent in accordance with a specification agreed with the EPA to document the current quality of the water in and adjacent to the FDA. The results of these studies will be used by the EPA to determine the discharge water quality which is envisaged will be of similar quality to the water which currently flows out of the area on each outgoing tide. The nature of the baseline studies required has been agreed with the EPA and will start shortly. The construction methodology has also been reviewed to embrace an isolation and containment approach to the disturbed site to minimise dredging and the volumes of water to be dealt with during construction. All water being discharged from the construction site will be collected and treated on site before being discharged by a dispersion method.

Minimal dredging is required during the construction phase. In the completed development it is expected that the need for dredging may not arise for up to 12 years. It is anticipated that maintenance dredging will involve a dewatering facility within the FDA with the dewatered material disposed of to a local land fill.

15.6 Marine Flora & Fauna

The habitat value of the FDA will be diminished during the construction phase. Some seagrass stocks will be disturbed and will need to be compensated. It is however clear that marine life including dolphins and dugongs will not be detrimentally affected by the temporary removal of the FDA from the marine environment or the construction process.

16 SOCIAL AND ECONOMIC BENEFITS OF THE TOT PROJECT

16.1 Social

The Townsville community values the City's vitality and relaxed lifestyle, the economic dynamism of the region, and the prosperity that has been experienced and sustained over the past decade.

The TOT Project builds from, and reinforces these prevalent social values.

Over 55% of residents support the TOT Project, citing the economic and tourism benefits, with a further 20% being neutral.

Social benefits, which are harder to quantity but are nonetheless significant, include the following:

- The TOT Project may enhance social capital and social cohesion in Townsville by increasing demographic diversity and encouraging a more cosmopolitan outlook for the City. The TOT Project provides a new active waterfront precinct of retail and recreational opportunities, open to all;
- The TOT Project will create significant employment opportunities. A person's quality of life and ability to actively participate in society is heavily dependent on their having a sustainable job;
- By creating additional marina facilities, the TOT Project will support a more active participation from some residents in marine-based recreational activities, and reinforce Townsville's reputation as a relaxed tropical city that values its outdoor lifestyle;
- The TOT Project provides significant tracts of public open space with high amenity value. This space offers local residents free access to ocean front recreational spaces, complementing the highly successful and popular Strand precinct; and
- The inclusion of high quality residential opportunities within the TOT Project meet the needs and aspirations of some existing Townsville residents who value the location and the inner-city, waterfront lifestyle offered by the location, and will also be extremely attractive to people currently not living in Townsville. In particular, high quality residential opportunities will enhance Townsville's competitiveness and attractiveness enabling it to lure professionals, para-professionals and senior managers to the City.

These reputational and flow-on benefits are difficult to quantify. But taken in their entirety, the TOT Project offers significant net social benefits – many of which are intangible, but with important ramifications for the ongoing development of Townsville as a cosmopolitan, globally competitive city.

The TOT Project represents a significant opportunity for the Townsville region to realise important tourism economic infrastructure with beneficial opportunities into the future, which is significantly funded by the Proponent. This represents a significant win or bonus for the Townsville community.

The integrated TOT Project will deliver significant direct and indirect benefits to Townsville and the North Queensland region in both economic and social terms. Many of these benefits will be long-lasting.

16.2 Economic

The economic benefits include the following:

16.2.1 Post Construction (long term)

- The TOT Project is important tourism infrastructure, which will assist in attracting increased visitations by passenger and naval vessels to Townsville. The TOT Project can catalyse the diversification and expansion of the cruise tourism sector in Townsville. Cruise shipping is recognized as a high-growth, high-yield tourism industry. The annual impacts of increased cruise tourism could range from $2m to $4.7m in value-add to the regional economy Up to 55 full-time equivalent jobs would be directly created by the operations of the TOT Project.

- The impacts of cruise shipping on economic sectors in the Townsville region will flow directly to businesses involved in accommodation, cafés and restaurants, other transport (e.g. taxis), trade and personal and other services.

- There is an opportunity for Townsville to capture some of the growing demand from the global superyacht sector, and unmet demand across Queensland for recreational marina berth facilities. This additional maritime activity could catalyse the development of a more mature maritime services sector in Townsville, further contributing to the diversification of the region's economy.

- The US Navy has recently expressed its strong support for the TOT Project and confirmed that the Ocean Terminal will be suitable for its use.

16.3 During Construction (short term)

- The construction of the TOT Project will generate significant benefits to the Townsville region's construction and building sectors. The construction of the TOT Project (excluding the Breakwater Cove buildings) involves an investment of approximately $209m, and over the 3 years of construction is forecast to generate $174.8m in value-added impacts on the regional economy and create 1,900 full-time equivalent jobs.

- These benefits are particularly relevant in a context where construction activity across Australia and North Queensland is slowing. In effect the TOT Project represents a counter-cyclical boost to the region's economy and will contribute to the easing of economic uncertainties for many people in the region dependent upon the vibrancy of the building and construction sectors.

The TOT Project will deliver significant long-term economic benefits to the region during construction and when fully operational.

16.4 Hazard and Risk

A risk assessment has been undertaken as part of the EIS and has been updated having regard to the Submissions and the further studies undertaken for the SEIS.

This assessment has identified that the risks are typical of projects of this nature and are generally considered to be of low to moderate levels. There are no identified 'extreme' risks to construction, persons or the environment post mitigation.

17 CONCLUSION

The TOT Project is a:

- critical infrastructure asset for the growth of Queensland's cruise ship tourism industry;
- it will enhance the ability of Queensland to capture growth opportunities in cruise tourism by providing berthing certainty to cruise operators and the Navies of the world;
- directly contribute to cruise tourism development in North Queensland;
- that it will catalyse the development of a range of ancillary marine-based tourism activities in the region;
- will foster the growth of a range of support industries to service increased marine activity in Townsville.

The major issues and potential impacts investigated in the EIS include the following:

- disruption to existing and future activities and growth of activities at the Port;
- impacts on the marine environment;
- construction impacts including water quality and the haulage of material to the site;
- disturbance to areas of cultural significance;
- increase in traffic to the CBD/Breakwater Precinct road network; and
- benefits to the Townsville and regional economy.

The purpose of the EIS is to assist the State in making an informed decision about the TOT Project having regard to the probable or certain effects on the environment and the community.

The public notification phase of the EIS provided an important opportunity to test the comprehensiveness, objectiveness and depth of the supporting technical material which gave the community the opportunity to explore the consequences of the TOT Project.

The process under the legislation is not about preventing development when there are identified environmental risks but about maximising the benefits to the community while minimising any environmental harm.

Submissions made during the public notification of the EIS have raised a number of potential environmental, social and community issues which the Submitters believed had not been adequately considered/investigated by the EIS. Each Submission has been examined by the Proponent and a number of further supplementary technical investigations were commissioned and the reports for each investigation are compiled in Volume 2.

These submission issues created a negative impression about the appropriateness of the TOT Project before the Proponent had the opportunity to investigate and report

All of these issues have been comprehensively investigated by the Proponent and its consultants and without exception, the potential for loss to the environment or cost to the Council or the Community has not been substantiated.

A checklist of the status of the key issues the State required to be further investigated and clarified, is set out below:

- the Proponent has confirmed a range of commitments made to the project;
- the current and future operation of the Port will not be constrained;
- the amenity impacts from the Port such as noise, dust and health risks, have with minimal exceptions, been found to be within acceptable limits for residential use;
- the Port Protection Measures provide robust protection for the Port for the exceptions;
- infrastructure impacts on the City are a normal urban growth issue and the TOT Project will pay its fair share;
- the operation of the temporary bridge across Ross Creek has been changed to give priority to marine traffic;
- an alternative barge haulage method across Ross Creek will further minimise inconvenience;
- the TOT Project can and will be designed to adequately deal with extreme storm events;
- TOT Project impacts on erosion for the Strand Beaches are insignificant;
- there are no significant impacts on critical terrestrial fauna habitats in the Breakwater Precinct;
- comprehensive seagrass mapping shows low densities in the FDA;
- water quality during the construction phase of the TOT Project will be maintained;
- the impact on the habitat for dolphins and dugongs is low;
- the community survey has been independently peer reviewed and its appropriateness confirmed;
- strong net community benefits are confirmed;
- the full integrated TOT Project will deliver significant economic value to the Region during the construction phase and beyond;
- the risks have been reassessed and confirmed as low to medium and acceptable;
- a Disaster Management Plan has been drafted with input from the Emergency Services Authorities including Council.

The Port through its own strategic planning has supported the TOT Project and other development within the Breakwater Precinct. For the Port to submit that the TOT Project will generate complaints about its current and future operations expansion ignores the Port's own very good record of environmental compliance and improvement during recent years while maintaining a growth factor within the Port.

The TOT Project remains feasible, beneficial, desirable and deserving of State support.

The EIS process is not the end of the development assessment process. Numerous technical issues raised by the Submitters will be further considered at the subsequent stages during Council's assessment of the TOT Project Development Applications.

The EIS and the SEIS conclude/support that after implementation of mitigation measures in a few appropriate areas to minimise effects, the impacts of the TOT Project are acceptable. The long-term social and economic benefits presented by the TOT Project can be realised without undue risk to environmental, social and cultural values of the TOT Project area, Townsville and North Queensland.

The TOT Project will be an addition to Townsville in that it will “lift the bar” and take the City to a new level.

17.1 TOT Project Team

The SEIS was undertaken by the Proponent with assistance from a team of expert consultants as listed below.

Organisation	Role
City Pacific Limited and Tabcorp	Proponent
Emanate	Project Planning Lawyer
Hyder Consulting	Lead Engineering Consultant
C&R Consulting	Ecologist and Hydrogeomorphologist
Coastal Engineering Solutions	Coastal Engineer
Global Environmental Modelling Systems	Oceanographer
Golder Associates	Geotechnical Engineer
Holland Traffic Consulting	Traffic Engineer
Veitch Lister Consulting	Traffic Modelling
Air Noise Environment	Air Quality Consultant
Chenoweth EPLA	Visual and Landscape Consultant
Transpac Consulting	Social and Economic Consultant
Northern Archaeology	Cultural Heritage Consultant
Steve Paul and Partners	Hydraulic Engineer
Hasthill Consulting	Electrical Engineer
UDP Consulting Engineers	Services Engineer
Flanagan Consulting Group	Civil, Structural and Environmental Engineer
Ron Rumble Pty Ltd	Acoustical and Vibration Engineer
UniQuest	Marine Mammal Expert
SEA02	Environmental Sustainable Development Expert
AES (Applied Ecology Solutions)	Ecologists and Marine Mammal Expert
JASCO Research	Ecology/Marine Expert
Hydrobiology Environmental Services	Environmental Scientists Water Quality Expert
Lloyds Register Group	Quality and Standards Experts

18 GLOSSARY OF TERMS

Adjusted average maximum A-weighted sound pressure level	The average maximum A-weighted sound pressure level during a specified time interval, adjusted for any tonal characteristics or impulsiveness.
Advisory Agencies	Any Agency or government departments who advise the State
Affected Persons	The persons affected, or who may be affected, by impacts arising from an activity or development proposal.
Ambient Conditions	The existing conditions such as the level of noise or air quality at a place from all existing sources.
Ancillary	Necessarily associated with a particular development but incidental to that development.
Annual Exceedance Probability (AEP)	The likelihood of occurrence of a flood of a given size or larger in any one year (usually expressed as a percentage).
Aquatic	Living, growing or taking place in or on water
Archaeological Assessment	Focuses on material culture remains and those types of material culture that have survived through time.
Australian Height Datum (AHD)	Survey height datum adopted by the National Mapping Council as the datum to which all vertical control for mapping is to be referred (0.0 metres AHD) roughly approximates mean sea level).
Average maximum A-weighted sound pressure level	(LAmax,T), for a specified time interval, means The A-weighted sound pressure level during the interval obtained by using time weighting (F) and arithmetically averaging the maximum sound levels of the noise during the interval.
Average Recurrence Interval (ARI)	The likely recurrence of a flood event expressed in terms of the long-term average number of years between the occurrence of a flood as big or bigger than the designated event, eg. Floods with a discharge as big as or larger than the 1% AEP flood event will occur on average once every 100 years.
A-weighting	The weighting applied to sound pressure level to approximate the response of the human ear to noise.
Background Level	In relation to an investigation of noise, means the A-weighted sound pressure level that is equalled or exceeded for 90% of that part of the interval in which the investigated noise is absent.
Baseline Data	Site-specific data pertaining to existing environment (physical, chemical, biological and human) in the vicinity of a project site that assists in establishing the current ambient conditions of the environment.
Baseline Studies	Baseline studies are fundamental surveys of the physio-chemical, biological and human environment undertaken to provide baseline data.
Bathymetry	The measurement of ocean depths to determine the sea floor topography.

Benthic Fauna (Benthos)	Organisms living at or near the bottom of a water body.
Best Practice Environmental Management	Management of an activity to minimise environmental harm through cost effective measures currently used nationally and/or internationally for that activity.
BICA Act	Breakwater Island Casino Agreement Act 1984 (as amended)
Bikeway	That portion of road, street or pathway set aside for use by cyclists.
Biodiversity	The variety of all life forms: the different plants, animals and micro-organisms, the genes they contain and the ecosystems they form. Biodiversity is often considered at three levels; genetic diversity, species diversity and ecosystem diversity.
Biological oxygen demand	Measure of oxygen depletion in water due to bacterial decay of organic pollutants. Gives an indication of how much organic matter exists in the water.
Breakwater	A solid barrier constructed in water to provide protection to life and property from the effects of coastal processes.
Breakwater Cove Precinct	The development precinct for construction of future residential and commercial land uses within the Project Site.
Bund Wall	A temporary barrier constructed to enclose a construction/excavation site to prevent the release of contaminants to receiving environments.
Catchment	The area draining to a particular site. It relates to a specific location and includes the catchments of tributary streams as well as the main stream.
Central Business District (CBD)	Zone of intense commercial and other activity at the centre of most cities and large towns.
Coastal Processes	The actions of natural forces such as waves, currents and tides that may influence shoreline and near shore environments.
Collector Road	A road whose primary function is the distribution of traffic between arterial roads and residential streets.
Community Consultation	The approach through which cultural significance is measured. In the case of indigenous culture, archaeological material may not account for sites, places and landscapes of spiritual, ceremonial or social significance, but may be made apparent through the knowledge of the traditional owners of the area. Cultural significance is also applicable to sites and places of significance to the shared history of the wider community.
Contaminant	Any physical, chemical or biological substance (gas, liquid, solid, odour or energy), which is released into the environment by act or omission.
Cumulative impact	Means the impact of a development in combination with other development whether existing or proposed.
Decommission	Dismantle an item following construction prior to relocation or disposal.

Discharge	The release or emission of a substance from a contained environment including runoff or overland flow from within a site.
Dissolved Oxygen	An indicator of water quality being the concentration of oxygen occurring in solution
Drawdown	The magnitude of the change in water level in a well, reservoir or natural body of water resulting from the withdrawal of water.
Dredge spoil	Sediments and materials removed from the seabed as a result of dredging activity.
Ecologically Sustainable Development (ESD)	Development, which meets the needs of the present without compromising the ability of future generations to meet their needs. Development, which seeks balance between social, economic and environmental values.
Ecosystem	The interrelated complex of plant and animal communities and their associated environment that functions as an ecological unit.
Effluent	A waste material, which is a by-product of human activity (e.g. liquid industrial discharge or sewage).
EMP	Environmental Management Plan
Endangered species	A plant, animal or micro-organism that is in immediate danger of biological extinction.
Endemic species	Native species confined to a given region (e.g. a species endemic to southern Australia is not found anywhere else).
Environment	Is as defined by the *Environmental Protection Act 1994*. *"Environment* includes — (a) ecosystems and their constituent parts, including people and communities; and (b) all natural and physical resources; and (c) the qualities and characteristics of locations, places and areas, however large or small, that contribute to their biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community; and (d) the social, economic, aesthetic and cultural conditions that affect, or are affected by, things mentioned in paragraphs (a) to (c)."
Environmental Harm	An adverse effect on the environment or on an identified environmental value.
Environmental Impact	Any change to the environment or an environmental value whether adverse or beneficial.

Environmental Impact Statement (EIS)	The information document prepared by a proponent in accordance with a terms of reference to assess all social, economic and environmental impacts that may occur as a result of a development proposal.
Environmentally Relevant Activity (ERA)	An activity prescribed under the *Environmental Protection Act 1994* that may result in release of a contaminant which may cause environmental harm.
Environmental Objective	Long term goals for **environmental management**.
Environmental Value	An aspect of the environment, which is of benefit to human amenity, safety or health or environmental health (may be identified by an environmental protection policy).
EP Act	Environmental Protection Act 1994
Existing Outer Breakwater	The existing breakwater currently located on the northern boundary of the project site to be upgraded for construction of the Northern Breakwater.
Extraction	Process of removal of material such as sand or rock from a substrate either on land or in water.
FDA	Future Development Area as defined in BICA Act
FDA Scheme	Future Development Area Scheme as defined in BICA Act
Flushing Time	The time required to flush a substance from a specified location.
Formal Agreement	Means the Formal Agreement in BICA Act
Freeboard	A factor of safety usually expressed as a height above a designated water height. May be specified to compensate for factors such as wave action, localised hydraulic effects etc.
Groundwater	Water that occurs naturally beneath the ground surface and may include the fraction of rainfall, which infiltrates the land surface.
Habitat	The normal abode or locality of an animal or plant; the physical environment of a community; the place where a person or thing can usually be found.
Hazard	An event, action or substance that may be a source of danger or threat to safety or health.
Heavy Metals	Metals of high atomic weight that may accumulate in the environment and may be toxic a low concentrations.
Hydraulics	The study of water flow in a waterway to quantify parameters such as water level, velocity and flow direction.
Hydrograph	A graph, which shows how, water discharge varies over time.
Hydrology	The study of the relationship between rainfall and runoff to determine how the discharge at a particular location in a waterway varies with time.

IAS	The Initial Advice Statement for the TOT Project.
Immission	The receiving of noise light or other intrusive elements at a place from an external source.
Indicator	A property that can be quantitatively measured to indicate the quality of an environmental value
Infrastructure	The basic facilities, services and installations needed for the functioning of a community or society, such as transport networks, drainage, water and sewerage.
Intertidal Zone	Zone between low tide and high tide levels.
Intrusive Noise	Means noise that, because of its frequency, duration and other characteristics is clearly audible to an individual and may cause annoyance.
Local Government	Townsville City Council.
Local Road	A road under the control of local government which has the function of the distribution of traffic between arterial and collector roads, and residential areas.
Maximum sound pressure level	The highest momentary sound pressure level from a single noise event.
Natural Hazard	Processes or events that arise in nature such as storm, cyclone, earthquake or fire which may result in impacts on life or property.
Nearshore	The zone that extends seaward of the shoreline.
Noise sensitive place	Is as defined by the *Environmental Protection (Noise) Policy 1997.* ***"noise sensitive place*** means any of the following places— (a) a dwelling; (b) a library, childcare centre, kindergarten, school, college, university or other educational institution; (c) a hospital, surgery or other medical institution; (d) a protected area, or an area identified under a conservation plan as a critical habitat or an area of major interest, under the Nature Conservation Act 1992; (e) a marine park under the Marine Parks Act 1982; (f) a park or garden that is open to the public (whether or not on payment of money) for use other than for sport or organised entertainment."
Northern Breakwater	The future breakwater to be located on the northern boundary of the project site.

Nutrients	Elements or compounds that are essential as raw materials for organic growth and development such as carbon, oxygen, nitrogen and phosphorus.
Organic	Derived from living organisms being chemical compounds with a carbon basis.
PH	A value, which represents the acidity or alkalinity of a solution.
Port Western Breakwater	The existing breakwater on the western boundary of the Port of Townsville (eastern boundary of the project site) to be upgraded for construction of the Townsville Ocean Terminal
Potable Water	Water that has undergone treatment to render it palatable and safe for human consumption.
Project Site	The 'Project Site' is the site identified as the 'Future Development Area' in the *Breakwater Island Casino Agreement Act 1984,* which is the site for development of the proposed ocean terminal and residential precincts.
Proponent	City Pacific Limited and Tabcorp
Protocols	Procedures and codes of correct conduct.
QA	Quality Assurance, the process that assures the quality of the end product meets all applicable quality standards.
Ramsar	International agreement signed in Ramsar, Iran, in 1971, to protect wetlands of international importance as habitat for waterbirds.
Receiving Environment	The environment into which an emission or contaminant is released.
Recolonisation	Re-appearance or re-establishment of a population of organisms into a given location or habitat
Revetment	A solid facing constructed to protect a land surface against erosive forces such as wave actions or weather.
Risk	The likelihood (probability) of occurrence of an adverse environmental impact, whether direct or indirect.
Runoff	The amount of rainfall that contributes to overland flow.
Sand Source Site	The 'sand source site' is the site proposed for extraction of sand within Ross River to be used in reclamation of the Project Site.
Sediment	Soil particles, sand and other mineral or organic matter eroded from land and carried in surface waters.
Shoreline	Located at the boundary of the ocean water surface and the shore or beach (mean high water mark).
Siltation	Sediments deposited by water in rivers, canals or other waterways.

Silt Curtain	A floating curtain of filter fabric that encloses dredging operations to prevent release of turbid waters.
State	The State of Queensland.
Strand Breakwater	The future breakwater to be constructed adjacent to the main access channel on the western boundary of the project site to provide continuous public access from the Strand foreshore parkland.
Substrate	(Biological) Base of substance upon which an organism is growing. (Hydrological) The bottom material of a waterway.
Subtidal	Below the low-water mark.
Suspended Solids	Any solid substance present in water in an undissolved state, usually contributing directly to turbidity.
Sustainable	Outcomes that can continue to be achieved now and in the long term.
Terms of Reference/ToR	The list of items required to be addressed by the EIS during detailed assessment of the TOT Project.
TOT/ TOT Precinct	The development precinct for construction of the Townsville Ocean Terminal facility within the Project Site.
TOT Project	The 'TOT Project' is defined as the total development and includes all construction and operational activities undertaken for development of the ocean terminal and residential precincts within the project site and for extraction of sand within the sand source site.
Turbidity	Optical clarity of water measured by the amount of material suspended in the water column.
Wastewater	Water that carries wastes from homes, businesses, and industries; a mixture of water and dissolved or suspended solids.