

# INTRODUCTION

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# 1. INTRODUCTION

#### Requirement for the EIS.

This EIS has been prepared to satisfy Part IX, Division 3 of the Formal Agreement in the Breakwater Island Casino Agreement Act 1984 (BICA), that the environmental effects of the development of the Future Development Area for the ocean terminal and residential development be addressed.

The Townsville Ocean Terminal Project (TOT Project), was declared to be a "significant Project" under Section 26 of the Queensland *State Development and Public Works Organisation Act* 1971 (SDPWOA) by the Coordinator-General (CG) on 26 October 2006. Accordingly Clause 65(2) of the Formal Agreement in BICA requires this EIS to be prepared under Part 4 – Environmental Coordination of the SDPWOA. The declaration initiates that statutory environmental impact assessment procedure under that SDPWOA.

The TOT Project has also been declared a controlled action under Section 75 of the EPBC Act subsequent to the referral of the TOT Project to the Minister under the EPBC Act on 16 October 2006.

As the statutory impact assessment process under SDPWOA is also the subject of a Bilateral Agreement between the Queensland and Australian Government in relation to environmental assessment under the *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act), this EIS functions as the assessment stage of that Act.

See Section 1.7 of this EIS for more detail.

#### Purpose of the EIS

The purpose of the EIS is to identify potential environmental impacts and to ensure that those impacts are avoided where possible. Where unavoidable, impacts must be examined fully and addressed so that the development is based on sound environmental protection and management criteria.

The first step to achieve the purpose of the EIS was the development of the Terms of Reference (ToR). The process involved formulation of a draft ToR by the Department of Infrastructure, with input from relevant Advisory Agencies and public comment.

A final ToR was provided to the Proponent in March 2007 and is contained in Appendix 1 to the EIS.

The function of the EIS is to address the ToR and provide an assessment of the potential impacts (positive and negative) on the environment as a result of the construction and operation of the TOT Project. In doing so, the "environment" referred to means:

- (a) ecosystems and their constituent parts, including people and communities;
- (b) all natural and physical resources;
- (c) the qualities and characteristics of locations, places and areas, regardless of size that stimulate biological diversity and integrity, intrinsic or attributed scientific value or interest, amenity, harmony and sense of community;
- (d) the social, economic, aesthetic and cultural conditions which influence, or are affected by, the entities and attributes mentioned in paragraphs (a) and (c); and
- (e) the local, regional, Queensland and Australian populations and labour market.





# The Level of Detail provided in the EIS to meet the level of approval being sought.

The EIS has been prepared to specifically assess and consider the approvals that will be sought under the provisions of the Formal Agreement in BICA being, inter alia:

- The development of the Townsville Ocean Terminal Facility.
- The establishment of a "Future Development Area Scheme" (FDA Scheme) that, subject to the Minister's approval under clause 69 of the Formal Agreement, will take effect as a Preliminary Approval under Section 3.1.5 of the *Integrated Planning Act 1997* for a mixed use development, comprising an ocean terminal, residential, retail commercial and marina development; and
- The approval of necessary Works Applications pursuant to clause 68 of the Formal Agreement in BICA to carry out the works required to reclaim the Future Development Area.

While the Proponent's involvement in the TOT Project does not extend to the actual construction of the Breakwater Cove Precinct residential buildings, as part of the BICA requirements, the proponent has also incorporated into this EIS consideration of the future land use of the reclaimed land platforms.

The extent of this development is managed by the Future Development Area Scheme, discussed in Section 3.3 of this EIS and may require subsequent applications for development approval for material change of use and/or works under the *Integrated Planning Act 1997* (IPA). Consequently, the CG report may, under s.39 of the SDPWOA, specify conditions that must attach to such development approvals.

Further to the above IPA approvals, other approvals under a range of legislation including but not limited to Integrated Planning Act 1997, Environmental Protection Act 1994, the Coastal Protection and Management Act 1995, Fisheries Act 1994, Vegetation Management Act 1999 are likely to be required. The specifics of these approvals is identified in Section 1.6 of this EIS

#### Structure of the EIS and its Audience

The EIS has been prepared for government assessment, stakeholder and community review on the basis of the ToR provided. A cross reference of this EIS (and the technical reports that support it), to the ToR is included in Section 4.17, however to assist navigation of the document by a reader, the EIS also follows the heading structure of the ToR. The detailed index to the EIS will provide readers with an overall view of the various components of the EIS report and the location of the specific Specialist Studies in the Appendix.

To address the varied level of interest and assessment that the EIS may undergo by such an wide ranging audience, the EIS has been prepared with three (3) levels of detail:

- An overall summary of the EIS for the TOT Project in the **Executive Summary**;
- A more detailed synopsis of the assessment undertaken and the proposed solutions for the mitigation of detrimental impacts in the **EIS Report**; and
- Expert Technical Assessments by the Proponent's consultation team in Section 7 Specialist Studies.

The methodology of this Structure is explained in Section 1.4 of this EIS Report.

A List of references for factual information in the EIS Report is included in Section 6.





# 1.1 Project Proponent

The Proponent of the Townsville Ocean Terminal Project is a joint venture partnership between Tabcorp and City Pacific Limited. Tabcorp's direct involvement will not extend beyond the approvals process and the design and construction and delivering of the TOT Precinct will be the full responsibility of City Pacific Limited. A contractual agreement for development of the site was formed between the Proponent and the State of Queensland in March 2006 in the form of a Development Agreement.

### 1.2 Project Description

#### Brief description of the key elements of the TOT Project.

The TOT Project consists of the following key elements:

- The cruise ship terminal, berthing pocket and associated facilities (the TOT Precinct);
- Integrated residential waterfront development (Breakwater Cove Precinct) and associated facilities;
- Commercial marina and marina facilities;
- Parklands and public facilities;

The TOT Precinct will be constructed within the Western Breakwater of the Port of Townsville and will provide dedicated berthing facilities for the cruise shipping industry and visiting navy ships. The Precinct will contain a wharf and terminal building with ancillary car parking, security , and landscaping.

The Breakwater Cove Precinct will be constructed on reclaimed land to the west of the TOT Precinct and will provide waterfront residential properties, predominantly as multiple dwellings with some detached housing lots.

Fill material will be required for construction and will be sourced from within the confines of the Project Site. Additional material will be sourced from other commercially approved extraction sites external to the Project area. Marine and land based transport routes will be utilized to facilitate construction requirements.

A detailed description of the TOT Project and its method of construction follows in Section 3 of this EIS.

Plate 1.2.1 below provides an overview of the key elements of the TOT Project at the Project Site.







# Plate 1.2.1 - Masterplan







#### **Associated Infrastructure Requirements**

The TOT Project will entail the construction of major new breakwaters and sea walls, for the development of the land platforms and for the protection of the canals and marina areas.

The TOT Precinct berth and wharf infrastructure will also be created in the initial stages of the TOT Project, together with a publicly available car parking facility.

The development of the TOT Project is not expected to require any major infrastructure upgrade or re construction of existing infrastructure other than normal development requirements for roads and the provision of standard services, such as water, sewer, power and telecommunications. These requirements are discussed in detail in Section 4.3 and 4.4 of this EIS.

Some temporary arrangements to relevant road networks and infrastructure for public safety and mitigation of impacts for haul routes will also occur and are discussed in Section 3.4.1 of this EIS. In particular, the Proponent's preferred haul route proposed a temporary access bridge across Ross Creek.

The Proponent has undertaken all relevant investigations, studies and surveys to satisfy the ToR. Specifically engineering, material sourcing and construction methodology investigations, detailed baseline environmental assessments, acoustic, air quality and traffic modelling data has been obtained to ensure that all impacts of the TOT Project have been properly considered throughout the development stage.

The following Specialist Studies on which the EIS is based are contained in Section 7: Appendix:

- Report On Potential Impacts On Matters Of National Environmental Significance (Epbc Act) -C&R Consulting
- Construction Methodology Report Hyder Consulting
- Temporary Bridge (Ross Creek) Preliminary Scoping Study Hyder Consulting
- Review Of Site Climatic Conditions Report Hyder Consulting
- Geotechnical And Acid Sulphate Soil Investigation Report Golder Associates
- Traffic Impact Assessment Report
- Infrastructure Report Hyder Consulting
- Waste Minimisation And Management Report Hyder Consulting
- Impact Of Tot On Water Quality Of Cleveland Bay C & R Consulting
- Coastal Engineering Study Coastal Engineering Solutions
- Oceanographic Studies And Investigation Of The Flushing Of The Canal Estate And Marina
- Air Quality Assessment Air, Noise, Environment
- Visual Impact Assessment Report Chenoweth EPLA
- Noise And Vibration Assessment Hyder Accoustic
- Electromagnetic Radiation Survey EMC Technologies





- Nature Conservation Study C & R Consulting
- Cultural Heritage Report Northern Archaeology Services Pty Ltd
- Social Impact Assessment Transpac Consulting
- Health And Safety Report Hyder Consulting
- Economic Impact Assessment Transpac Consulting
- Hazard And Risk Assessment Hyder Consulting

#### 1.3 Objective and Scope

The TOT Project reflects the Queensland Government's commitment to expanding the Queensland's Cruise Shipping Industry and implementation of the Queensland Cruise Shipping Plan (QCSP). The QCSP provides a whole-of-government framework for developing cruise shipping and sustainably realising Queensland's natural, cultural, social and economic potential in this expanding industry.

As a fundamental objective in realizing the potential of the QCSP for Queensland, the provision of appropriate, dedicated infrastructure:

- suitable for large cruise ship vessels;
- in locations attractive to touring companies; and
- able to be constructed without adverse environmental impacts to the significant natural environment (which is the primary attractant of tourists to Queensland shores);

#### is required.

Tabcorp, as the Trustee of the Breakwater Island Trust, and operator of the Townsville Hotel and Casino Complex entered into contractual arrangements with the State that lead to the release of lands and State lease areas surrounding and adjoining the Townsville Hotel and Casino Complex for development.

These areas had been specifically controlled since 1984 under the original Breakwater Island Casino Agreement Act as gazetted in 1984.

This area, identified on Plate 1.3.1, had remained undeveloped since 1987 when the casino was completed and was uniquely located:

- Adjoining the major tourism node of the Townsville Hotel and Casino Complex and Townsville Entertainment Centre;
- In close proximity to the Strand recreational areas and the Townville CBD;
- Adjoining existing marina facilities and residential precincts; and
- Adjacent to the Port of Townsville where current cruise and military ships were required to berth to visit Townsville.





#### Plate 1.3.1 - BICA Area Map



The Future Development Area in particular was a substantial area, that could be "tailor-made" by reclamation to create the land and water infrastructure required for a cruise ship terminal.

Recognising the opportunity to implement a key element of the QCSP, amendments of the *Breakwater Island Casino Agreement Act* 1984 (BICA) therefore occurred in June 2006 to achieve the following objectives:-

- The release of land, know as the Surplus Casino Land from control under BICA and implementation of the Surplus Casino land Scheme (as a Preliminary Approval) under the *Integrated Planning Act 1997*, to manage its future development under IPA;
- To put in place transitional arrangements in relation to the Project Site (known as the Future Development Area within BICA) to assess the future development of the area for a cruise terminal and residential precinct; and
- Retention of management of the Casino Site within BICA in accordance with State government policy on the control of casino facilities.

# Relationship with the Surplus Casino Land/other development

The TOT Project is not directly related to any other Townsville development.

The development and construction phases of the TOT Project may occur in conjunction with the development of the Surplus Casino Land areas, but the TOT Project is not related to, nor dependant upon the Surplus Casino Land. The Surplus Casino Land was released by Tabcorp to the general market and has now been sold to various developers who, under the assessment and approval guidance of the Townsville City Council will, implement the intentions of the Surplus Casino Land Scheme.





As will be discussed further in section 2.3 and 4.15 of this EIS, the ability to provide the TOT facilities is also wholly dependent on the integration of the Breakwater Cove Residential Precinct, from an economic perspective. Without the residential component, the development is not viable.

This EIS deals specifically with the assessment of impacts of the Future Development Area under BICA for the TOT Project.

At a local level, reclamation of the Project Site has also been a desirable objective within numerous Townsville City Council's historic strategic planning documents, such as the CBD Masterplan and the recent City Port Strategic Plan.

# **Objectives of the Project**

The primary objectives for the TOT Project therefore are:

- To deliver a dedicated berthing facility in Townsville in accordance with the QCSP for the growth of the Cruise Shipping Industry in Queensland;
- To deliver the intended development anticipated under BICA;
- To encourage recreational cruise shipping to visit and to encourage additional visits to Townsville by USA and Australian Military vessels through the provision of this dedicated berthing facility;
- To expand limited vessel mooring space with the Townsville marina market, including the first dedicated super yacht berthing facilities;
- To provide a high quality residential/marina development within the Project to expand Townsville's reputation as a vibrant water-orientated living community;
- To generate employment within the service industries;
- To generate capital investment in the city centre;
- To provide appropriate port protection measures to ensure the location of the TOT Project near to the Port of Townsville manages amenity impacts on the residential values and does not restrict existing and future port operations.
- To set up appropriate management structures to minimise any future impact on the State or local community with respect to the management and maintenance of the TOT Project.
- To implement ESD principles into all aspects of the development.
- To implement best practice environmental management procedures during design construction and operational phases of the Project.
- To provide improved car parking for the Townsville Entertainment Centre and Townsville Hotel and Casino complex.
- To comply with all Commonwealth, State and Local Government environmental standards in the approval, construction and operation of the TOT Project.
- To work with Local Government and other relevant authorities to ensure minimisation of social and economic impacts and for the respective management of any such impacts as the Project develops.
- To maintain open community involvement and communication with all Stakeholders throughout the life of the Project.





• To ensure protection of environmental values identified during the EIS process during construction and operation of the TOT Project.

# Envisaged Time Scale/Staging/Project Life

The TOT Project is currently in the EIS phase set out in detail in Section 1.4 of this EIS.

It is anticipated the TOT Project will be constructed over a 39 month period beginning in March 2008 in accordance with the preferred construction methodology set out in the *Hyder Construction Methodology Report* contained in Appendix 5.

In general, the proposed phases of development and corresponding construction periods are outlined below in Table 1.3.1.

# Table 1.3.1 – Construction Program

Development Phase	Timeframe	Commencement
Construction of sea walls and bunds to dewater site	12 months	May 2008
Construction of terminal building and wharf	16 months	Jan 2009
Excavation and compaction of all land forms and canals	14 months	March 2009
Precast / Engineering fill and rip rap	13 months	September 2009
Handover to State and commissioning of TOT Precinct		May 2010
Construction of roads and services	12 months	March 2010
Landscaping works	6 months	April 2010
First sales of residential lands		June 2010

The TOT Precinct is anticipated to be completed and the berth and terminal facilities commissioned in May 2010. This is prior to completion of the Breakwater Cove Precinct which is due to be completed in subsequent stages.

It is anticipated that the final stages of the Breakwater Cove Precinct will be completed by May 2011, however construction of houses and multiple dwelling units will have commenced on earlier released stages by that time.

Residential construction is expected to occur for approximately 5 years after delivery of the final land parcels, however this will be at the discretion of later owners

# Anticipated Overall Costs

As discussed in Section 4.15 of this EIS, the establishment costs of the TOT Project are anticipated as the following direct impacts identified in Table 1.3.2 below:





# Table 1.3.2 – Anticipated Overall Costs

Reclamation Works & TOT Precinct construction	Direct Impacts	Indirect Impacts	Induced Impacts	Total Impacts
Output (\$)	209,349,980	87,452,184	74,272,443	371,074,601
Value added (\$)	96,701,528	38,364,115	39,808,281	174,873,922
Labour income (\$)	62,803,244	20,896,586	17,341,939	101,041,770
Employment	1,048	446	419	1,913

Source: Economic Impact Report, Transpac 2007

While the construction of the residential elements of Breakwater Cove will not be undertaken by the Proponent, as indicated in Table 1.3.3 below, it is anticipated that the total direct cost of the construction of residential dwellings in the Breakwater Cove Precinct (approximately 200 detached houses and 500 multiple dwelling) will be:

Table 1.3.3 - Economic Ir	npacts of Resid	lential Construction	

Breakwater Cove Residential construction	Direct Impacts	Indirect Impacts	Induced Impacts	Total Impacts
Output (\$)	168,405,024	76,069,222	38,554,502	283,028,750
Value added (\$)	68,575,680	32,576,710	20,664,307	121,816,703
Labour income (\$)	25,348,500	18,099,729	9,002,126	52,450,356
Employment	772.9	370.3	208.9	1,352.10

Source: Economic Impact Report, Transpac 2007

# Actions already undertaken with the Project Area

The Project Site has been the subject of some earlier works, initially being the construction of the Port Western Breakwater on the eastern boundary (so named as it is the "western" breakwater of Platypus Channel). In 1984, the BICA Act authorized the construction of the adjoining land reclamation that created the surplus Casino Land on the southern boundary of the TOT Project Site.







Plate 1.3.2: Historical Construction of Surplus Casino Land and Casino Site 1985

Plate 1.3.2 above indicates the existing Port Western Breakwater and the commencement of land reclamation works at that time.

As BICA in 1984 anticipated the further development of the Project Site, a Northern (Offshore) Breakwater was also built and can be seen in Plate 1.3.3.

No further development of the Project Site has occurred and the Project Site is only utilized for temporary (unauthorized) anchorage by recreational marine vessels.



Plate 1.3.3: Historical Construction of Surplus Casino Land and Casino Site 2005



# Consequences of not Proceeding with the TOT Project

The global cruise shipping industry is one that requires significant infrastructure, provided in a manner that allows for the creation of touring itineraries of varying destinations within a geographic region for a global market.

The lack of dedicated berthing facilities is considered a significant weakness prohibiting the expansion of this industry in Queensland waters.

At present, Townsville is a significant destination for the US Navy for recreational stopovers and training events. Limitations however on the ability for the existing Port of Townsville facilities to provide berthing, (particularly on short notice due to operational requirements of the US Navy) hamper growth in number of visitations.

Sustaining the current level of visitation will also become under pressure as other facilities around the globe are becoming more competitive in securing this lucrative business.

The TOT Project is of strategic importance in the Queensland Shipping Industry initiative without which, the overall QCSP Plan will fail to achieve it's intended outcomes.

As will be discussed further in section 2.3 and 4.15 of this EIS, the ability to provide the TOT facilities is also wholly dependant on the integration of the Breakwater Cove Residential Precinct, from an economic perspective. Without the residential component, the development is not viable.

#### 1.4 The Environmental Impact Statement (EIS) Process

In simple terms, the purpose of the environmental impact statement process under Section 4 of the SDPWOA is:

- To require the Proponent identify all environmental effects of the Project, to allow the Coordinator General to evaluate such effects and any other related matters; and
- To give the public the opportunity to inspect the EIS, and provide submissions on the EIS to the Coordinator General for consideration.
- To be an accredited assessment process under the Bilateral Agreement to satisfy the EPBC Act.

#### 1.4.1 Methodology of the EIS

To achieve that outcome, the EIS will follow the process specified in Part 4, Division 3 of the SDPWO Act and the Bilateral Agreement. The SDPWO Act outlines mandatory steps to be complied with by both the proponent and the Coordinator – General.

Table 1.4.1.1 below identifies this statutory process and the timing of the various steps required to satisfy the SDPWO Act. Step 9 is also a specific requirement of the Bilateral Agreement.





# Table 1.4.1.1

	REQUIRED ACTION	ANTICIPATED TIMING
1.	Proponent provided Coordinator – General with an Initial	Completed
	Advice Statement	(October 2006)
2.	Coordinator-General declared the TOT Project to be a	Completed
	significant Project for which an EIS is required.	(26 October 2006)
3.	Coordinator - General advised proponent that EIS was	Completed
	required and publicly notified that:	(January 2007)
	(a) an EIS is required; and	
	(b) Where copies of the Draft Terms of Reference (DToR) may be obtained; and	
	(c) comments on the DToR are invited.	
4.	Coordinator – General finalises DToR and published the	Completed
	final Terms of Reference (TOR).	(March 2007)
5.	Proponent prepares draft EIS to satisfy the TOR.	September 2007
6.	Coordinator – General identifies satisfaction with draft EIS and authorises publication.	November 2007
7.	Public advertisement of availability of EIS and that public submissions can be made occurs	PROCESS IS HERE NOW
8.	Public Submissions lodged with CG within Submission period.	Submissions period close 1 February 2008
9.	Proponent required to consider all public submissions and produce a Supplementary EIS to respond <sup>1</sup> .	February 2008
10.	Advisory Agencies comments on Supplementary EIS	March 2008
11.	Coordinator – General must considers the Supplementary EIS, all properly made submissions and any other relevant material.	April 2008
12.	Final assessment report evaluating the EIS prepared by Coordinator – General	April 2008
12.	Coordinator – General's evaluation report given to proponent and publicly notified	April 2008

Pursuant to the *Environmental Protection and Biodiversity Conservation Act 1999*, the Commonwealth Minister for the Environment also undertakes a separate approval process following release of the Coordinator - General's Report. Additional requirements of this approval process post receipt of the Co-ordinator General's evaluation Report are discussed in Section 1.7 of this EIS.

# 1.4.2 Objectives of the EIS

1

The Objectives of the EIS are as follows:

The action is a specific requirement for EIS under the Queensland Bilateral Agreement. See Section 1.7





- To provide information on the proposal and development process to the community and decision makes;
- To comprehensively identify and evaluate all relevant issues associated with the proposal;
- To identify all potential environmental, cultural, social, transport and land use planning impacts of the preferred concept, and recommend infrastructure and facilities needs together with other design and operational measures required to minimise or compensate for adverse impacts and enhance benefits;
- To engage with the community and relevant stakeholders in the process of identifying, assessing and responding to the impacts of the proposal;
- To identify all necessary licences, planning and environmental approvals under any relevant legislation or planning instruments; and
- To provide an input to the decision-making process, assisting with the determination of whether to accept or modify the proposal, approve it with conditions or carry out further studies.

#### Structure of the EIS

To achieve the above objectives for the EIS, a three (3) tiered structure for the EIS has been adopted by the Proponent. This structure has also been adopted to ensure that the EIS can be reviewed or understood by interested parties on various levels.

LEVEL	STRUCTURE ELEMENT	PURPOSE
1	Executive Summary	To convey the most important aspects and options relating to the TOT Project to the reader in a concise and readable form
2	EIS Report	To be the key environmental document providing advise to decision makers considering approval of the TOT Project and to the public, by addressing all relevant matters concerning environmental values, impacts on those values and proposed mitigation measures.
3	Technical Reports (Annexures)	Detailed technical Information of the assessments, investigations and modelling undertaken by the proponent in considering the environmental values of the TOT Project.

Interested persons may inform themselves of the environmental values addressed in the EIS at a general, comprehensive or technical level (or a combination of the three) at their discretion.

The main text of the EIS Report is the primary environmental document. Key elements of the EIS include:

- A full description of the proposal and a justification of the need for the development;
- A full description of the existing biological, physical, social and economic environments to provide baseline information;
- A description of the legislation, policies and plans as they relate to the proposed development;





- A description of considered alternatives to the development and the associated impacts of each;
- A description of the nature, extent and significance of any potential impacts associated with the Project and their likely consequences; and
- An environmental management plan outlining measures that will be undertaken to minimize, ameliorate and monitor impacts that may arise as a result of construction and operation activities.

Each of these key elements is specifically set out in the identifiable Sections and Sections of the EIS Report. As such, readers should be easily able to navigate the EIS by reference to the overall Index provided. Each Section also includes an independent Section Index.

The EIS also specifically adopts the ToR heading structure, to ensure that the Proponent's response to the specific ToR identified is easily able to be located by a reader. A cross reference Table is also provided in Section 4.17.

#### 1.4.3 Submissions

The Coordinator General's evaluation of this EIS is undertaken after the end of the submission period.

Pursuant to clause 35 of the SDPWO Act, the Coordinator – General must consider all properly made submissions and other accepted submissions at the same time as consideration of the EIS is undertaken.

As the TOT Project is also a controlled action under the EPBC Act, a Supplementary EIS Report addressing all public submissions is required to be compiled by the Proponent pursuant to the Bilateral Agreement entered into between the Commonwealth and State agencies. This Supplementary EIS must specifically address any issues raised by the submissions and will be additional to the original EIS provided.

It is mandatory for the Coordinator – General to make his evaluation including the submissions, to ensure they are an integral part of the decision making process.

#### 1.5 Public Consultation Process

#### **Formal Community Consultation**

General public consultation and involvement in the assessment of the impacts of the TOT Project will occur at three main levels:

- Prior to the ToR being issued:
- During the EIS process; and
- With the advertisement of the Coordinator General Report.

Prior to the preparation of this EIS, the community, interested parties and Stakeholders have been consulted in formulating the ToR that the Proponent is required to consider within this EIS by:

• Public notification undertaken by the Coordinator General identified that preparation of an EIS was required for the Project. Information was provided to assist such parties in obtaining copies of the draft ToR, and notifying them where it could be inspected.





• Public, advisory agency and stakeholder comment on the draft ToR was received by the Coordinator – General, who incorporated the raise comments and issues of importance into the ToR for the Tot Project;

As indicated in Section 1.4 of this EIS, the EIS must undergo a formal public notification process allowing the public, stakeholders and any interested parties to comment on the EIS as follows:

- The Coordinator General will publicly advertise that the EIS has been prepared and that public submissions are invited on the EIS. The advertisement will also identify where the EIS can be viewed or purchased by any interested party:
- The EIS will remain available for viewing and purchase for a minimum of 30 days [subject to CG confirmation];
- The Proponent must then review and provide a summary report of all comments received about the EIS during the public notification process. If need be, further information must be provided to respond to any further issues for the TOT Project will be provided;
- The Coordinator General's evaluation report will be placed on a publicly available website;

# Public Consultation Program

The Proponent has undertaken a program educating the public about the proposed TOT Project and has surveyed the community attitudes toward the proposed TOT Project. Section 4.13 and 4.15 of this EIS specifically identifies the social, local economy and community impacts of the development resultant from the program following the Proponent's actions in:

- Initiating public advertising in community newspapers and distributing brochures to a large demographic area providing general information on the Project and directing parties interested in the TOT Project to:
  - <sup>°</sup> Review further information made available on the proponent's website; and
  - <sup>°</sup> Register their interest in being further contacted about the Project.
- Compiling a database of interested parties who will be notified of the availability of the EIS in due course;
- Considering the comment and discussion of the TOT Project in the local media;
- Undertaking an independent quantitative survey by telephone questionnaire to understand and gauge community's attitudes;
- Undertaking consultation with affected community groups, such as Sunfish, Major Port users and adjoining residential developments.

Volume Two of the Social Impact Assessment contained in Appendix 21 details the methodology and detailed results of this consultation of 409 randomly selected adult residents which in summary found:

- 55% of residents are favourable towards the proposed TOT with a further 20.5% indifferent. Net favourability for the integrated Project is +34.2%.
- The proposed development is seen as enhancing social capital and social cohesion through its contribution to increasing diversity and multi-culturalism and the cosmopolitan nature of the city and through its recognising the newfound maturity and sophistication that prevails in the City.





- The proposed development as having a positive impact in terms of contributing to the growth of Townsville, but without impinging on the positive lifestyle aspects of the Twin Cities.
- The proposed development is expected to augment existing recreational assets and opportunities but not at the expense of being "out of character with existing lifestyles" or "at odds with the goals of balancing growth and lifestyle".
- The integrated development and its various components are seen in the community as being able to deliver economic benefits through investment and additional jobs and economic wellbeing and stability in the local economy through increased tourism expenditure. More importantly the development is seen as being capable of doing so without compromising lifestyle benefits of the local area.
- The positive economic impact on Townsville of the integrated proposal (32.6%) and the Ocean Terminal (32.2%) and the residential and marina complex (37.6%) as components of it, was the most consistent driver of support for the Project.
- The potential boost to tourism was nominated as the main driver of support for the integrated proposal (34.1%) and the Ocean Terminal (39.1%) as a component of it.
- The potential negative impact on the environment was the most recurrent reason given for opposing the integrated proposal (31.7%) and both the Ocean Terminal (29.0%) and the residential and marina complex (26.7%) as components of it.
- An increase in traffic congestion in the Strand precinct and increased pressure on essential services and infrastructure also figured prominently as reasons for opposing the integrated development and each of its components.
- Community concerns about conflict between the proposed TOT and the existing Port infrastructure was raised by no more than approximately 12% of those that opposed the integrated Project. More significantly, no more than 6.5% of respondents that opposed the residential development per se (i.e. not including the Ocean Terminal facility) nominated conflict with operations at the Port as their reason for their unfavourable view.
- When asked specifically about the compatibility of the Ocean Terminal development with the Port, the survey found that 68% of respondents believed that the proposed TOT would complement the Townsville port infrastructure.
- Approximately 50% of all respondents were of the opinion that their use of the area would remain unaffected by the construction activities of the integrated development and its various components.

The overall tenor of the survey results indicate that the majority of residents believe that the TOT Project will lead to improvements in public amenity, particularly in term of enhanced recreational facilities accessible to the public.

The survey further found that the majority of respondents believed that the TOT Project would improve and sustain the quality of life in Townsville through the creation of new jobs, contribute positively to quality of life in the city by increasing the recreational opportunities available to its residents and complement the redeveloped Strand, which is already a widely used recreational asset.

# Interest Groups/Stakeholder Consultation

It was a primary element of the consultation program to identify key stakeholders including residents, businesses, government agencies and interest groups. In this regard, specific consultation was undertaken (or attempted) with:





- Department of Main Roads;
- Townsville City Council;
- Townsville Port Authority:
- Major Port Users;
- Traditional Owners (See Section 4.12 of the EIS);

#### **Government Consultation**

While the Coordinator General's office is directly consulting with it's Advisory Agencies, as a major component of the TOT Project is the construction of what will be State owned infrastructure, the Proponent regularly consults with the specific State government agencies to progress the satisfaction of the contractual arrangements relevant to the specification of the TOT wharf and terminal facilities.

Particularly:

- The Department of State Development;
- The Department of Infrastructure; and
- The Department of Transport;
- Customs;
- AQIS

are involved in this component of the development to ensure that the State interests are being achieved.

# Future Consultation

As an integral part of the EIS process, in the event specific issues or interest groups arise, the proponent is at all times willing to discuss and inform such groups directly in relation to the TOT Project.

#### 1.6 Project Approvals

# 1.6.1 Relevant Legislation and Policy Requirements

Prior to gazettal of BICA in 1984, the TOT Project Site was State Waters adjoining the Port Western Breakwater of the Port of Townsville.

Given the brief history of the Project Site, identified previously in Section 1.3 of this EIS, the original BICA oversaw the reclamation and construction of the existing land peninsulas that contain the Townville Hotel and Casino Complex, the Townsville Entertainment Centre and the Mariner's North and marinas facilities (the Casino Site and Surplus Casino Land).

Under the original BICA Act, rights were also provided to the Breakwater Island Trust (the Trustee of which is now Tabcorp) to obtain a further development lease, to later reclaim the area that is now the TOT Project Site<sup>2</sup>.

<sup>&</sup>lt;sup>2</sup> 64. (a) The Trustee shall, subject to this Clause, be entitled during a term of fifteen (15) years from the Operative Date to the exclusion of any other person to apply to the State for the grant of a special lease authorizing the reclamation and development of,





The Project Site is intrinsically bound to the original and amended *Breakwater Island Casino Agreement Act 1984* (BICA) and the Formal Agreement gazetted therein.

BICA has now been amended to comprehensively update the approval, use and statutory process applicable to the TOT Project Site. These amendments are part of a Development Agreement with the State entered into in June 2006 by the Proponent.

#### **Legislation Controlling Approvals Process**

The following Table 1.6.1 summarizes the legislation and policies controlling the approvals process:

Legislation	Jurisdiction	Application	
Breakwater Island Casino Agreement Act 1984	Department of Infrastructure and State Development and Queensland Treasury	Specific Transitional Arrangements which provide for the application in respect of the TOT Project Site. Discussed further below.	
State Development and Public Works Organisation Act 1971	Department of Infrastructure and State Development	Controls the EIS process for Projects of state significance. Details of this process are included in Section 1.4 of this EIS.	
Environmental Protection and Biodiversity Conservation Act 1999	Commonwealth Department of Environment and Heritage.	Assessment process for Projects declared to be controlled actions for its impacts on matters of national environmental significance. This process is discussed in Section 1.7 of this EIS.	
Integrated Planning Act	Department of Local	Application subject to BICA.	
1997	Government, Planning and	Applies for general process for all future development assessment and approval for the Breakwater Cove Precinct.	
Environmental Protection Act 1994	Environmental Protection Agency	Assessment of all environmentally relevant activities (such as dredging).	
Environmental Protection Policy (Noise)	Environmental Protection Agency	Applies to assessment of noise impacts for proposed development.	
Coastal Protection and Management Act 1995	Environmental Protection Agency	Assessment Criteria for Operational Works (Tidal Works) Applications pursuant to State Coastal Management Policy must be undertaken.	

# Table 1.6.1 legislation controlling approvals process

and authorizing the vesting in the Trustee for an estate in fee simple over, any area of land being any part or the whole of the Future Development Area.





Legislation	Jurisdiction	Application
Fisheries Act 1994	Department of Primary Industries and Fisheries	Assessment process for approval to remove, destroy or damage marine vegetation (including sea grass/mangroves)
Great Barrier Reef Marine Park Act 1995	Great Barrier Reef Marine Park Authority	The Project Site is not within the jurisdictional boundaries of the GBR Marine Park.
Nature Conservation Act 1992	Environmental Protection Agency	Applies to works that may interfere with a protected animal or plant.

#### The Rights and Responsibilities of the Proponent under BICA

Development of the TOT Project Site was envisaged under the original *Breakwater Island Casino Act of 1984* pursuant to Clause 64 of the Formal Agreement, allowing the Trustee (of the Breakwater Island Trust) to make an Application for a Special Lease to develop an area known as the "Future Development Area", adjoining the Casino Site.

That area generally corresponds to the Future Development Area as now defined under the amended *Breakwater Island Casino Agreement*.

Part IX, Division 3 contains specific transitional provisions to control the Development<sup>3</sup> and Use<sup>4</sup> of the Project Site. In particular, the transitional provisions now provides for:

- The preparation of this EIS by the Proponent to address the environmental effects of the Development; and
- The right for the Proponent to apply for approval by the Minister of the Future Development Area Scheme<sup>5</sup> in respect of the Development and Use of the Future Development Area; and
- The Future Development Area land Platforms<sup>6</sup> to become land from the date of completion of reclamation works; and
- A process for the Proponent to obtain the approval of reclamation works for the Future Development Area to facilitate the Development provided for in the Future Development Area Scheme; and
- The most appropriate tenure during construction and ongoing use of the Future Development Area to be determined and applied for by the State and Proponent.

BICA also requires the implementation of a specific Future Development Area Port Protection Code as part of the Future Development Area Scheme when approved.

Port Protection measures will be discussed in detail in Section 2 – 2.2 of this EIS.

<sup>&</sup>lt;sup>6</sup> *Future Development Area Land Platforms* means the land platforms in the Future Development Area shown in the Future Development Area Scheme.



<sup>&</sup>lt;sup>3</sup> Development means—

<sup>(</sup>a) a Material Change of Use; or

<sup>(</sup>b) Work; or

<sup>(</sup>c) Reconfiguring a Lot; or

<sup>(</sup>d) the carrying out of a Prescribed Activity.

<sup>&</sup>lt;sup>4</sup> Use includes any ancillary use.

<sup>&</sup>lt;sup>5</sup> *Future Development Area Scheme* means a scheme for the Future Development Area approved by the Minister under clause 66(5).



#### Approval Process under for Future Development Area Scheme

Upon the Coordinator General completing its report evaluating the Environmental Impact Statement, BICA gives the Proponent the right to apply to the Minister for approval of the a planning instrument to provide planning controls for the Project Site after reclamation<sup>7</sup>. This Future Development Area Scheme will control development on the TOT Project Site

The technical content of the Future Development Scheme will be discussed in further detail in Section 3.3 of this EIS.

The Future Development Area Scheme, when approved, will be deemed to take effect as a Preliminary Approval (overriding the Planning Scheme) pursuant to Section 3.1.6 of IPA.

#### Approval Process for Port Protection Code

Prior to the Minister granting approval of the Future Development Area Scheme<sup>8</sup>, a Future Development Area Port Protection Code<sup>9</sup> must be authorised by the Chief Executive of the Department responsible of the *Transport Infrastructure Act 1994*. This Future Development Area Port Protection Code takes effect as a code identified for development (and will be included) in the Future Development Area Scheme as an applicable Code.

The overall objective of the Future Development Area Port Protection Code is to:

- Acknowledge the Port operations and their importance;
- Make initial and subsequent buyers abundantly aware of the Port and its potential nuisance;
- Remove Body Corporate rights to complain or sue the Port; and
- Regulate the building design to mitigate any nuisance impacts.

- (b) identify codes for the Development.
- (4) The Minister must—

(5) The Minister must-

(d) approve the proposed Future Development Area Scheme with variations; or

<sup>&</sup>lt;sup>9</sup> Future Development Area Port Protection Code means a code for the purpose of minimising the potential impact of the infrastructure and operations of the Townsville Port on the Development of the Future Development Area notified by the chief executive of the department responsible of the Transport Infrastructure Act 1994 as having been authorised to the Local Government, the Townsville Port Authority and the owner or owners of the Future Development Area prior to the Future Development Area Scheme taking effect.



<sup>66</sup> Application for approval of the Future Development Area Scheme

<sup>(1)</sup> The Trustee or its nominee may apply to the Minister for approval of the Future Development Area Scheme after the Coordinator-General has completed a report evaluating the environmental impact statement under Part 4— Environmental Coordination of the State Development and Public Works Organisation Act 1971 and given a copy of the report to the Trustee or its nominee.

 <sup>(2)</sup> The application mentioned in clause 66(1) is made by lodging with the Chief Executive—

 (a) a submission comprising of a proposed Future Development Area Scheme and such reports, drawings or other material as is necessary to explain the Future Development Area Scheme; and
 (b) such other information which may be required by the Chief Executive.

 <sup>(3)</sup> The proposed Future Development Area Scheme may for the purpose of the *Integrated Planning Act 1997* do either or both of the following for the Development specified in the proposed Future Development Area Scheme—

 (a) state that the Development is assessable development (requiring code or impact assessment), self-assessable development or exempt development; and

<sup>(</sup>a) consider the application; and

<sup>(</sup>b) make a decision in respect of the application in accordance with clause 66(5); and

<sup>(</sup>c) advise the applicant in writing of the decision.

<sup>(</sup>a) approve the proposed Future Development Area Scheme in whole or in part unconditionally; or

<sup>(</sup>b) approve the proposed Future Development Area Scheme in whole or in part subject to conditions; or

<sup>(</sup>c) refuse the proposed Future Development Area Scheme in whole or in part; or

<sup>(</sup>e) deal with the proposed Future Development Area Scheme under any combination of clauses 66(5)(a), (5)(b), (5)(c) or (5)(d).

<sup>6)</sup> The Minister must subject to clause 66(7) decide the application within 20 days of the lodgment of the application.

<sup>(7)</sup> The Minister may extend the decision making period specified in clause 66(6) by not more than 20 days by written notice given to the applicant before the end of the decision making period.

<sup>&</sup>lt;sup>8</sup> Op.Cit. Footnote 9



The Port Protection Code and other Port Protection mitigation measures are discussed in detail in section 2.2 of this EIS.

#### Local Government Planning Controls

The TOT Project Site, as an area of State Water, is not specifically subject to Townsville City Plan 2005. As will be discussed in Section 3.3 of this EIS, the Future Development Area Scheme has been designed by the Proponent to reflect the overall structure, Applicable Codes and Policies of City Plan 2005 that would be applicable for the same type of development had it occurred in other areas of Townsville, this consistent approach will give certainty to future users of the land.

Development applications requiring approvals will be assessed pursuant to Future Development Area Scheme.

A list of the possible future Development Approvals required for the TOT Project Site is provided in Appendix 2 as required by the ToR.

It should be specifically noted that under the preferred construction methodology identified in Section 3.4 of this EIS and the attached Construction Methodology Report contained in Appendix 5, the Proponent is not required to obtain any approvals for fill material as only on site reclamation works and existing approval material source sites will now be utilised.

#### City Port Strategic Plan

At the time of the Proponent finalising this EIS, the Townsville City - Port Strategic Plan was a publicly available document dealing with the objective of providing a shared vision for decision makers from responsible Government agencies to use to achieve an effective and sustainable interface between Townsville's port area and the adjacent City area, little more than a kilometre away. The purpose of the document is to provide an interface between the two as strong economic growth and the attractiveness of near City settings with marine access and ocean views are leading to pressure for construction of economic infrastructure and other industrial, commercial and residential developments. The proposed TOT development has been considered as part of the overall context of this interface and is part of the Townsville City Port Interface Area in the Plan.

The Townsville Ocean Terminal and the Breakwater Cove Precinct are identified as Precinct 9 and 10 respectively under the Plan and the overall development concept currently being proposed is also included within the document.

The Precincts have been specifically identified as proposed by the Proponent and their development is included within the indicative Project schedule.

At no stage is it considered that the proposed development is in anyway contrary to the strategic planning intent proposed in this document.

#### 1.6.2 Planning Processes and Standards

The TOT Project Site does not conflict with any long term planning strategies for the Townsville or Thuringowa Local Government Areas. As the TOT Project Site was not a statutory part of the Local Government Area, it is also not specifically discussed in any such documents.

In general, support for the use of the Breakwater Cove Precinct is obtained from the Townsville City Council's existing planning objective for the Breakwater Precinct in District Code 1 of City Plan 2005.

Previous strategic reviews supported by the Townsville City Council, such as the CBD Masterplan have also proposed development of the TOT Project Site and the expansion of marine based





facilities adjacent to the Strand. The CBD Masterplan in fact, proposed a significant increase in the residential density for the Project Site well over that proposed by the TOT Project Site.

The CBD Masterplan's proposal for the TOT Project Site is identified in Plate 1.6.1 below:



# Plate 1.6.1 - CBD Masterplan

# 1.7 Accredited Process for Controlled Actions under Commonwealth Legislation

This Project is a controlled action under the Commonwealth's *Environment Protection and Biodiversity Conservation Act 1999* (EPBC Act). In this regard, the Commonwealth has accredited the State EIS process for the purposes of the Commonwealth's assessment under Part 8 of the EPBC Act pursuant to the Queensland Bilateral Agreement.

When a State EIS process has been accredited, it is necessary for the terms of reference to address potential impacts on the matters of National Environmental Significance (NES) that have been identified in the 'controlling provisions' when the Project was declared a controlled action.

The requirements of the Bilateral Agreement are that a stand-alone report addressing the matters of NES be provided as an appendix to the EIS. This requirement was replicated in the ToR and the report is contained in Appendix 3 of this EIS.

Various nature conservation issues relevant to impacts on matters of NES are also discussed in various sections of Section 4.11 of this EIS.

The matters of NES to be specifically addressed under the requirements of the *EPBC Act* for the TOT Project are:





- Sections 12 and 15A: Great Barrier Reef World Heritage Area
- Sections 16 and 17B: Bowling Green Bay Ramsar Site
- Sections 18 and 18A: Listed Threatened Species and Communities, for
  - Humpback Whale (*Megaptera novaeangliae*)
  - Flatback Turtle (*Natator depressus*)
- Sections 20 and 20A: Listed Migratory Species, for:
  - Dugong (*Dugong dugon*)
  - Humpback Whale (*Megaptera novaeangliae*)
  - Flatback Turtle (*Natator depressus*)

#### 1.7.1 A Description of the Affected Environment Relevant to the Matters Protected

An assessment of matters of national environmental significance (NES) has been undertaken by C&R Consulting. A stand-alone EPBC Report outlining the results and recommendations of this assessment is contained in Appendix 3 and is summarised here.

The Project Site is located within an area of complex interactions between Local, State and Federal jurisdictions, each with their own specific, and often inconsistent, environmental assessment criteria. The most contentious points of conflict result from the existence of a relatively large coastal city with an active export and import Port within zones of Marine National Parks and World Heritage Areas. The anthropogenic settlement and associated activities imply a degree of impact, whereas National Parks and World Heritage Areas imply relatively pristine conditions. This contradiction means that the Development may be assessed against the stringent conditions relating to developments in protected areas, but that these conditions themselves have to be assessed against a background of impacted conditions. In these circumstances it is believed that a criteria of "no significant proportional increase over existing ambient conditions in the Cleveland Bay environment" should be used as an assessment criterion.

A list of species protected under the EPBC Act including marine mammals, reptiles, birds and fishes was compiled using a number of databases, including the Department of the Environment and Heritage's Environmental Resources Information Network (ERIN).

#### Protected Habitats

The TOT development site is located adjacent to the GBRWHA, which is listed as a Protected Matter. The key habitats in the GBRWHA are soft-sediment benthic communities, seagrass beds and coral reefs. The habitats of highest environmental sensitivity in Cleveland Bay are the seagrass beds and the coral reefs. The condition of these habitats has been assessed by C&R Consulting and the results are presented in Section 4.11 of the EIS.

The Ramsar-listed Bowling Green Bay wetlands are located upstream of the TOT Project site and are considered at minimal risk of impacts from the development. Some birds species listed under the EPBC Act use both the wetlands and Cleveland Bay and are described in the EPBC Report.

#### Protected species

The list of protected species compiled by ERIN search engine for the Cleveland Bay area included 95 species identified as Protected Matters. These included 22 seabirds, 12 marine mammals, 22 marine reptiles and 39 ray-finned fish species. Further species were added to this





list from the Queensland Environmental Protection Agency (EPA)'s list of environmentally sensitive species. These species are listed in the EPBC Report and include the following mammals, reptiles and birds.

- Snubfin Dolphin
- Dugong
- Humpback Whale
- Indo-Pacific Humpbacked Dolphin
- Flatback Turtle
- Blue Whale
- Bryde's Whale
- Green Turtle
- Estuarine Crocodile
- Loggerhead Turtle
- Leatherback Turtle
- Olive Ridley Turtle
- Hawksbill Turtle
- Red Goshawk
- White-bellied Sea-eagle
- White-throated Needletail
- Barn swallow
- Australian painted snipe
- Black-faced monarch

The sensitive species most commonly reported from Cleveland Bay are dugongs, turtles, snubfin dolphins, Indo-Pacific humpback dolphins, humpback whales and various species of sharks. These species, and the specific value that the TOT Project Site may have to individual species in terms of habitat, feeding and associated values are described in Section 4.11 of this EIS.

# 1.7.2 Potential Significant Impacts on Matters of National Environmental Significance

The potential impacts of the TOT Project on surrounding habitats include:

- Increased noise pollution through construction activities and the increase in large and small vessel traffic during operation;
- The increased potential for boat strikes;





- Adverse affects on water quality through increased turbidity, causing light attenuation and sediment deposition onto seagrasses and corals, with corresponding impacts on listed species dependant on such ecosystems for food source;
- Contamination of seagrasses, corals, benthic communities and water quality from oil, chemical or sewerage spills;
- Fishes in Cleveland Bay may be subject to increased recreational exploitation, as a result of the increased visitation caused by the Development;
- Elevated nutrient contents, endangering seagrasses and corals through the increased growth and shading by macroalgae, and through an increase in contaminants in the water and sediments;
- Damage to seagrasses and benthic communities through contaminated sediments;
- The potential burial of benthic organisms through sediment deposition; and
- The potential reduction in predator populations of benthic invertebrates (e.g. fishes, birds).

These impacts have the potential to:

- Modify or inhibit ecological processes in a World Heritage property, by interfering with the health of coral reefs, seagrass beds and benthic communities through water and sediment quality reduction;
- Reduce the diversity or modify the composition of plant and animal species in all or part of a World Heritage property, by causing mortality to the more vulnerable species of seagrasses, corals and benthic invertebrates;
- Fragment, isolate or substantially damage habitat important for the conservation of biological diversity in a World Heritage property, by reducing seagrasses and therefore removing an important food resource for Dugongs;
- Cause a long-term reduction in rare, endemic or unique plant or animal populations or species in a World Heritage property;
- Fragment, isolate or substantially damage habitat for rare, endemic or unique animal populations or species in a World Heritage property

# 1.7.3 Assessment of Relevant Impacts and Mitigation Measures

For each matter of NES, recommendations are made for the prevention, monitoring and remediation of all potential impacts. Many impacts can be prevented through the maintenance of water and sediment quality, the education of construction and operation staff, residents and visitors, the early preparation of contingency plans, the avoidance of dredging during adverse tidal, current and weather conditions, the establishment of, and adherence to, a strong monitoring programme and the adherence to strict measures to mitigate the impacts of noise, marine debris and vessel traffic.

If water and sediment quality are maintained at current conditions, then it is concluded that the Project is sustainable. However, it is stressed that given the high environmental values of the corals, seagrass beds, and other flora and fauna of the Bay (e.g. the Snubfin Dolphin), maintenance of this water and sediment quality is vital to the sustainability of these ecosystems and the viability of the Project. To this end, a stringent monitoring programme involving:





- Continuous water quality monitoring for the operational phase,
- Quarterly, annual and event monitoring at designated locations, of corals, seagrasses, dolphins and other listed fauna, and their associated ecosystems, during the construction period and continuing for a period of 5 to 10 years after the Development has been completed.

Quarterly, annual and event monitoring at the same designated locations, of sediments and waters for a comprehensive range of chemical species including heavy metals and nutrients, during the construction period and continuing for a period of 5 to 10 years after the Development has been completed.

Except for the continuous water quality monitoring, the above mentioned recommendations are proposed on the basis of the precautionary principle. Should an event be experienced then reference should be made to the continuous water quality monitoring to determine the probability of the impact originating specifically from this Development.

