EXECUTIVE SUMMARY

(1) Background

The Port of Townsville is a major port for the export and import of bulk commodities such as nickel ore, copper and zinc concentrates and raw sugar. It is also the most important general cargo and container port in North Queensland. The port is strategically located, both for road and rail, at the junction of corridors running north-south and east from the Mount Isa region and is of economic significance at a regional and state level.

Trade through the port has increased dramatically over the past 10 years and strong growth is expected to increase in future.

As is the case with many city ports in the world, the Port of Townsville operates in close proximity to areas of residential and commercial development. Port generated road and rail traffic is required to move through such areas.

From a port operations point of view, this raises several important issues. Firstly, there is a need to safeguard landside transport links to ensure that commodities can freely move to and from the port. Secondly, there is a need to ensure that adjacent residential and commercial areas are not subject to unacceptable environmental impacts and risks.

Additionally, there is a need to ensure that transport corridors are safeguarded from changes in adjacent land uses that might be incompatible with transport operations.

For these reasons, the key transport stakeholders (Queensland Transport, Department of Main Roads, Queensland Rail, Townsville Port Authority, Townsville City Council) undertook this Impact Assessment Study (IAS) with the objective detailed below.

Objective of the IAS

The objective of the Townsville Port Access Impact Assessment Study (IAS) is:

> ***to provide or secure an option to provide environmentally sustainable and socially acceptable landside transport access to and from the Port of Townsville to meet the needs of the Port to the year 2025 and beyond, whilst minimising impact on Townsville's central and residential areas.***

IAS Options

Previous studies[(1)] identified two broad land access options which were seen to have the potential to meet the above objectives.

1. upgrade the existing Port access corridors; and/or
2. develop a new "eastern corridor".

These options are detailed in Figure 1.2.

[(1)] *DJA Maunsell (1996), Townsville Port Access Study, Report prepared for the Townsville Port Access Steering Committee.

A wide range of options was developed and assessed in the IAS process and essentially comprised variations and combinations of these two broad options.

Studies was undertaken during the IAS to identify the construction and ongoing operation implications of each alternative port access route option.

These studies included the following technical areas: geology, soils, water quality, air quality, noise, flora and fauna, ecology, risk and hazard, social impacts, economic impacts, hydraulics, transport network implications (rail, road and river traffic), aesthetics and cultural heritage.

IAS Stages

- **Stage 1** involved a Needs Assessment to confirm whether there was a requirement for the upgrade of road and rail access to the Port.
- **Stage 2** refined the two broad options resulting in a number of "prudent and feasible" alternatives for more detailed study in Stage 3.
- **Stage 3**, which was split into two parts 3A and 3B, selected a preferred alternative based on technical, financial, environmental, cultural and amenity grounds.

The IAS process will involve two further stages:

- **Stage 4** will specify a future course of action for implementation of the preferred alternative.
- **Stage 5** involves preparation of Environmental and Cultural Heritage Management Plans to ensure construction and ongoing management of the preferred alternative minimises or avoids the impacts identified in Stages 1 through 3. The timing for Stage 5 will be determined after the previous stages have been completed.

(2) Role of IAS in Decision Making

The Impact Assessment Study commenced in late 1996:

- pursuant to Section 29 of the then State Development and Public Works Organisation Act 1971; and
- in accordance with the Policies and Administrative Arrangements for Impact Assessment in Queensland dated January 1987 (Commonly known as the "Green Book").

The Responsible Authority is Queensland Transport acting through the Director, Regional Transport Planning. Advisory Bodies with a major interest in the project have been identified and are listed in Appendix B.

The duties of the Responsible Authority are set out in Section 2.1 of the Policies and Administrative Arrangements for Impact Assessment in Queensland at that time.

The fundamental duty of the Responsible Authority is:

'to give appropriate and responsible consideration to the impact of any development likely to have major environmental effects and to have due regard to such matters in deciding whether the development should proceed and what, if any, conditions need to be imposed. It should be noted that the legislation required that "the beneficial as well as the detrimental effects of any development on the physical, biological or social systems within which such development occurs" be taken into account by a Responsible Authority. Such assessment

may be considered within local, regional and/or State perspectives to determine the implications of a proposal.'

The Responsible Authority is also required:

- to conduct and seek the views of Advisory Bodies,
- to make recommendations as to whether a development should or should not proceed and what constraints, if any should be imposed on the development,
- to monitor progress of the Impact Assessment Study and assist where possible with solving any problems or minimising any delays,
- to decide upon the extent of public consultation and public release of reports.

In 1999, the environmental coordination provisions of the State Development and Public Works Organisation Act were amended so that impact assessment under Section 29 only applies to projects that are designated as 'significant projects' by the Coordinator-General. In recognition of the strategic significance of the project and the complexity of local, State and Commonwealth requirements, the Director-General of Queensland Transport requested that the Townsville Port Access project be declared a 'significant project' under the State Development and Public Works Organisation Act. The Coordinator-General agreed to this request and the declaration was gazetted on 14 December 2000. The powers and responsibilities for completing the IAS process were delegated to Queensland Transport.

Because the project may involve some future Commonwealth funding for its implementation, it was also a requirement at the time of commencement that the Impact Assessment Study be consistent with Commonwealth Government requirements for impact assessment as set out in the Environmental Protection (Impact of Proposals) Act 1974 and the Administrative Procedures made under subsection 6(1) of the Act.

The object of the Commonwealth Environment Protection (Impact of Proposals) Act 1974 was to ensure, to the greatest extent practicable, that matters affecting the environment to a significant extent are fully examined and are taken into account in relation to Commonwealth actions and decisions. To ensure that Commonwealth obligations were met, and to reduce possible duplication of assessment processes in the future, Commonwealth requirements have been addressed and satisfied as part of this Impact Assessment process. With the coming into effect of the Commonwealth Environment Protection and Biodiversity Conservation Act in July 2000, the IAS has also addressed potential impacts on matters of "National Environmental Significance".

(3) Rationale of IAS

This Impact Assessment Study is characterised by the objective of identifying a transport solution rather than assessing a proposed infrastructure project. Potential options to provide environmentally sustainable and socially acceptable landside transport access were identified and assessed. These options generally involved variations and combinations of the two basic route options identified prior to the IAS, namely the existing corridor(s) Boundary St (Road) and Perkins St (Rail) and the proposed Eastern Corridor for rail and road.

The Steering Committee has generally followed the Staging system defined in the Terms of Reference (Refer Appendix A).

However, at the commencement of Stage 3, the Steering Committee recognised the need to divide this stage into 3A and 3B for reasons detailed in Section 7 of this Executive Summary.

The way in which all options were identified and assessed, and the means by which a preferred option was identified is summarised in Sections 5 – 8 of this Report.

(4) Consultation Process

Consultation was a critically important and integral component of this Impact Assessment Study. The process included consultation with:

- the key transport stakeholders;
- advisory bodies;
- relevant Commonwealth and State government agencies, particularly with respect to meeting Commonwealth requirements; and
- other stakeholders, including local communities, and representatives of traditional owners.

Three main objectives of the community consultation component of the assessment were:

- to provide a process of community involvement that would both "add value" and give a representative and equitable view of issues and perceived impacts;
- to identify those perceived impacts of the various options on stakeholders; and
- to elicit data from local knowledge or suggestions for amelioration that might influence the communal choice of Port Access options, or alter the options themselves.

The consultation program was prepared by Phillips Group (formerly Turnbull Fox Phillips) in accordance with the Queensland Transport and Main Roads Public Consultation Policy, Standards and Guidelines.

In addition to the general consultation program, arrangements were made for the local indigenous groups to be involved in consultation and cultural heritage activities through the provision of a facilitator, Dr Luke Godwin of Central Queensland Cultural Heritage Management.

Very extensive public consultation phases over 4-6 weeks have been held four times during the IAS process as well as two focused consultation periods. Project team members have been available locally throughout the project with the freecall number and website operational throughout the study period.

A consultation audit was carried out during Stage 3A and the consultation activities and operation have been adjusted to overcome any perceived concerns.

(5) Needs Assessment (Stage 1)

The Needs Assessment addressed the question:

"Can the existing transport infrastructure (without significant upgrading) meet the landside requirements to the port to the year 2025 and beyond?"
The conclusions reached from this Needs Assessment were as follows:

- the existing road transport infrastructure cannot, without significant upgrading, meet the landside requirements of the port to the year 2025 and beyond; and

- the existing rail transport infrastructure is likely, without significant upgrading, to be able to meet the landside requirements of the port to the year 2025 and beyond:
  - however, this is purely from a railway operational perspective as there will be impacts on road transport (particularly with respect to intersections), community amenity and the environment without appropriate network integration and amelioration measures, as well as land use measures to mitigate conflicts with transport operations.

The conclusions were supported by the public comments and the finding that "the existing land transport infrastructure cannot, without significant upgrading, meet the landside requirements of the port to the year 2025 and beyond;" was recommended to the Minister for Transport and Main Roads. This was endorsed in December 1997.

(6) Refinement of Broad Options (Stage 2)

Stage 2 commenced with consideration of two broad options in the IAS as follows:

- the proposed Eastern Corridor which was based on the concept developed in the DJA Maunsell Report (March 1996) and which provided for an eastern transport corridor through the parcel of land generally described as 'the south bank'. Such an option would require construction of a bridging system at the mouth of the Ross River. This option provided for a number of possible linkages back into the Bruce Highway and an option for linking industrial land at Stuart and beyond; and

- the existing corridor (upgraded as appropriate) which consisted of Boundary Street (Road) and Perkins Street (Rail) into the Port precinct. Consideration of new road linkages to Perkins Street and upgrading works in the vicinity of the existing Boundary Street and Saunders Street intersection formed part of this broad option.

From these two broad options, eight specific options were identified consisting of various combinations of the following elements as shown in Figure 3.2.

- The proposed Eastern Corridor rail route;
- An Eastern Corridor road route with three possible variations at the southern end;
- The existing Perkins Street rail corridor;
- The existing Boundary Street road access;
  or
  a proposed alternative road access along Perkins Street.

On the basis of the Stage 2 assessment, the following options were seen to be prudent and feasible and recommended for more detailed study in Stage 3.

- Upgrade Perkins Street Rail and Boundary Street Road Corridor (**Option 1**).
- Upgrade Perkins Rail Corridor and develop new Perkins Street Road, provided this can be achieved in a way compatible with efficient port road layout (**Option 2**).
- Provide Eastern Corridor for Road and Rail Access and Upgrade Boundary Street and upgrade Perkins Street Rail Corridor (**Option 3**).
- Provide Eastern Corridor for Road and Rail Access and Develop Perkins Street Road and upgrade Perkins Street Rail Corridor (**Option 5**).

Notwithstanding the low benefit to cost ratio of Eastern Corridor rail options, Options 3 and 5 had the potential for social and amenity benefits from reduced rail traffic on the existing rail corridor. Further, if an Eastern Corridor Road was developed, it would be prudent to

reserve a corridor wide enough for road, rail and services. Options 3 and 5 were therefore preferred to Options 7 and 8 which have road only on the Eastern Corridor.

It was also recommended that in Stage 3, the possibility of combining Options 1 and 2 be considered, with and without the Eastern Corridor, as a means of improving amenity through reduced traffic impacts in South Townsville.

The draft conclusions were supported by the public comments and Options 1, 2, 3 and 5 were carried forward for further assessment in Stage 3.

(7) Assessment of Alternatives (Stage 3A)

The decision to introduce an interim stage - Stage 3A was made because further detailed investigation was required into several key aspects before the four options identified in Stage 2 could further be narrowed down. Given the importance of these aspects to the community and interest groups which had been closely involved in the study so far, the Steering Committee introduced Stage 3A to address them.

Stage 3A comprised studies in respect of:

- South Townsville Traffic and Transport;
- Bridge options for crossing the Ross River;
- Rail Traffic;
- Noise and Vibration Studies in South Townsville area;
- Social Impact Studies;
- Compatibility with Port Development Plan;

in order to further reduce the number of options to two or three prudent and feasible alternatives which was the original intention of Stage 2, prior to undertaking full assessment of the prudent and feasible alternatives in “Stage 3B”. At the same time, the Steering Committee commissioned further technical work, preparatory to Stage 3B, in respect of:

- Dry weather fauna survey;
- Migratory waders survey;
- Hydrological modelling of area south of Ross River;
- Cultural Heritage.

The term “prudent and feasible options” describes options assessed as being worthy of further detailed consideration, on the basis that they were judged to be sufficiently sound and practical courses of action.

On the basis of the community consultation, cultural heritage and technical studies in the Stage 3A assessment the Steering Committee recommended that the following options should be discounted.

- The option of combining Options 1 and 2 without an Eastern Corridor (**Option 2a**) was not recommended because:
  - it spread noise impacts without significant improvement in Boundary Street;
  - it provided little benefit for the investment in new Perkins Street Road infrastructure.

- Similarly, the option of combining Options 3 and 5 was discounted because of the spread of noise impacts, little improvement in Boundary Street and very high cost.

- *Option 3a and 5a* - were not recommended over Options 3 and 5 as a fixed low level bridge was the preferred bridging option, provided there was a satisfactory resolution of the issue of relocating river users *and* the Defence Force accepts 6 metre clearance in accordance with their undertaking to QT.

The draft conclusions and recommendations were supported by the public comments and submitted to the Responsible Authority. The Responsible Authority concurred with the recommendations and forwarded them to the Minister. The Minister publicly announced on the 14th December, 1999:

- That Perkins Street, either along or in combination with Boundary Street, no longer be considered as a potential road access to the Port of Townsville during this Study.
- That rail access to the port continue to be provided along Perkins Street for the foreseeable future.
- That Boundary Street be retained as a road access to the Port with further investigation of options and measures to be undertaken as a matter of priority in consultation with the local community. More specifically, it is recommended that:
  - the Department of Main Roads investigate short term measures such as road resurfacing, other noise mitigation measures and traffic and pedestrian safety measures with a view to improving amenity and reducing social impacts,
  - the Department of Main Roads further investigation the extent and severity of vibration generated by traffic on Boundary Street, and
  - the Townsville office of the Department of Premier and Cabinet initiate a whole-of-government process to identify ways in which town planning and other associated mechanisms might be used to facilitate the introduction of less noise sensitive land uses in the vicinity of Boundary Street.
- That Boundary Street and the Eastern Corridor be further developed as a staged and integrated transport solution during Stage 3B if the Eastern Corridor is shown to be environmentally acceptable.
- That further discussions regarding bridging options be held with the Department of Defence as a matter of priority.

(8) Assessment of Alternatives: Option 1 vs Option 3 (Stage 3B)

Option 1

For **Option 1** Boundary Street would remain the sole road access route to the Port of Townsville to 2025 and beyond. Similarly Perkins Street would remain the sole rail access route to the Port to 2025. There would be no reservation or development of an Eastern Corridor of any kind. Boundary Street would be upgraded through:

(i) pavement treatment to reduce noise and vibration and measures to improve safety and pedestrian access – these works could be undertaken by Department of Main Roads;
(ii) improving amenity through change in land use over time – as announced by the Minister for Transport and Main Roads in December 1999 this will involve a 'whole of Government approach".

Notwithstanding these improvements to Boundary Street **Option 1 is not recommended** for the following reasons:

- it confines all road traffic to and from the port to a single corridor – Boundary Street for the long term (ie.beyond 2025);

- it confines all rail traffic to and from the Port to the Perkins Street Corridor for the long term (ie. beyond 2025) and provides no opportunity for reducing rail traffic in South Townsville through an alternative rail route for traffic to/from the west and south;

- it provides no opportunity for pipeline and conveyor link between the port and the industrial areas near Stuart;

- it provides no **alternative** port access route for emergency or hazardous cargo.

- although Boundary Street has the capacity (in terms of normally accepted traffic measures) to accommodate forecast traffic growth to 2025, increasing traffic volumes will have an increasing negative impact on South Townsville residents in terms of noise, vibration safety and accessibility;

- because of the growing impacts, and notwithstanding the Minister for Transport and Main Roads' decision to initiate a "whole of government" process to address changing land use in Boundary Street, there is therefore a significant risk that Option 1 will not be "socially sustainable" in the long term;

- there is the risk that community concern about the environmental and social impact of traffic, particularly Heavy Goods vehicle traffic and vehicles carrying hazardous goods, may ultimately constrain 24 hour access to and from the port and thereby constrain the growth and efficiency of the port with a consequent adverse impact on the economy of North Queensland.

In summary the Steering Committee considers that Option 1 will not provide socially acceptable landside transport access to the port in the long term, and that if Option 1 were selected:

- the port's ability to extend existing business; and
- the port's ability to attract major cargo and port-related development (such as Sun Metals);

will be increasingly constrained over time by landside transport access.

Option 3
In Option 3, Boundary Street will remain an important road access route to the Port to 2025 and beyond and Perkins Street will remain an important rail link to the port to 2025 and beyond. Boundary Street will be upgraded as for Option 1. In addition, an Eastern Corridor will be provided for road access, with the opportunity for future development of rail, pipeline, conveyor and other services and utilities.

Option 3 is recommended for the following reasons:

- it provides an alternative route for road and rail traffic to the port including hazardous goods and emergency access vehicles;

- although an Eastern Corridor road link will not reduce total road traffic in Boundary Street, and Boundary Street will remain a road access route, it will reduce Heavy Goods Vehicle traffic on Boundary Street and Abbott Street from future 2025 forecast levels for Option 1;

- an Eastern Rail Corridor will provide an alternative rail route for freight rail traffic with origin destination south and west of Townsville – future rail traffic in Perkins Street will therefore be lower for Option 3 than for Option 1;

- there will be fewer adverse impacts on amenity for Option 3 compared with Option 1;

- Option 3 provides the opportunity for conveyors and pipelines linking the port to industrial areas in Stuart and further south;

- It provides **opportunity** for attracting cargo growth and major industrial development in North Queensland without the risk that port access issues may constrain such development. It also provides opportunity for land development south of the port in the Stuart area;

- Option 3 provides greater flexibility and security of access for the long term;

- Option 3, which provides for port access through both Boundary Street (Road), Perkins Street (Rail) and Eastern Corridor (Road and Rail) provides the maximum opportunity for the port to develop and facilitate economic development in North Queensland;

- Whilst Option 3 has greater impacts on the natural environment than Option 1, there is "no fatal" flaw and work undertaken in this IAS confirm that environmental impacts are manageable and an Eastern Corridor would not endanger the environmental values of the area.

- Whist Option 3 passes through areas of higher indigenous cultural heritage value than Option 1, it is not expected that Option 3 will have major impacts on cultural values.

- Construction of the Eastern Corridor road and rail embankments would have the effect of marginally increasing Q100 flooding levels on a limited number of properties in South Townsville, Railway Estate and Oonoonba. Mitigation measures such as provision of flood levees around affected areas would have the added benefit of protecting the subject properties from flooding which already occurs.

- Whilst on the basis of forecast traffic flows and cost estimates, Option 3 has a much higher cost and lower Benefit Cost ratio than Option 1. Option 3 does have the potential for much greater economic and social benefits arising from secure, improved port access and opportunities for enhancing the port's role as an economic generator for North Queensland.

- The specific matters of National Environmental Significance under the Commonwealth Environment Protection and Biodiversity Conversation Act 1999 have been reviewed and it is considered that Option 3 could be constructed without having significant impacts on such matters.

In summary, Option 3, which provides for two port access routes, for both road and rail, meets the objectives of the IAS in terms of securing port access which is environmentally sustainable and socially acceptable.

(9) Staging of Option 3

The IAS has not identified any pressing need on **capacity** grounds for immediate development of the Eastern Corridor. However there is a need to reserve the Corridor in order to:

- provide certainty to the community, affected landowners, potential developers and the planning instruments in the Townsville region;
- to prevent use of the corridor land for other purposes;
- to inform the Townsville City Planning Scheme so that any necessary measures can be taken to avoid incompatible adjacent land uses.

The likely timing of development of road, rail or other infrastructure in the corridor will depend on a range of issues including:

- actual growth in port cargo and road and rail traffic;
- the rate of industrial development, particularly in the Stuart and Woodstock areas;
- the needs of any particular major industries which may be attracted to Townsville;
- availability of funds;
- wider regional development initiatives.

It is anticipated that the first stage development would involve a road link with development of a rail link proceeding only in the longer term, though if growth is greater than forecast, the need for a rail link may be brought forward.

(10) Recommended Actions

Implementation of Option 3 will involve a wide range of actions required by appropriate government agencies.

These will include the following:

(1) Reservation of the Eastern Corridor;
(2) Addressing Native Title issues associated with acquisition and use of the Eastern Corridor in accordance with the State Government's Native Title procedural documents for dealings in land and natural resources;
(3) Upgrading Boundary Street to reduce noise and vibration impacts and improve safety by:
    - partial reconstruction of the road pavement to reduce vibration impacts;
    - resurfacing the road with open graded asphalt that will reduce wheel noise;
    - implementing the recommendations from a safety audit of the road. Consideration will also be given to upgrading parts of the existing stormwater drainage system to reduce flooding impacts on the road and adjacent properties.
(4) Implementing the whole of government process to address future land use in the Boundary Street corridor.
(5) Once a decision has been made to proceed with the actual construction of a low level bridge then discussions need to be initiated with users of the Ross River upstream of the proposed fixed bridge crossing of Ross River in the context of:
    - the commercial marina development proposed by Townsville Port Authority and the opportunity created for relocation of users;
    - other opportunities for recreational boat users of the Ross River;
    - the impact on river users and river dependent businesses.

- the likely timing of bridge construction and the terms of existing leases of up river land.

(6) An Environmental Management Plan (EMP) and Cultural Heritage Management Plan (CHMP) will need to be prepared prior to construction of any works in the Eastern Corridor. The EMP and CHMP should address inter-alia the mitigation measures proposed in this IAS (refer Appendix F). The EMP and CHMP will also need to deal with any changes to legislation and/or changes to information contained in the IAS.

(7) The Draft Guidelines for protection of environmental values on the Ross River southern floodplain proposed in this IAS (refer Appendix E of this report) need to be adopted and implemented by agencies responsible for approval of such development.