



# Port Expansion Project EIS

Part B

Section B22 – Emergency Management



## B.22 Emergency Management

### B.22.1 Relevance of the Project to Emergency Management

The purpose of this chapter is to assess the Port Expansion Project (PEP) in relation to emergency management and response to disaster conditions as recognised and prepared for at organisational, regional and state levels. This chapter discusses regulatory requirements and obligations concerning emergency management for the Project and examines various impacts and existing mitigation strategies to prevent, prepare for, respond to and recover from disaster conditions that may affect the PEP.

Queensland is highly susceptible to extreme climatic events and natural hazards such as tropical cyclones, floods, bushfires, and storms. Additional potential hazards resulting from the presence of humans such as failure to design adequately, industrial incidents, anti-social behaviour, issue motivated groups, and terrorism have resulted in the development of a coordinated approach to reducing risk and the creation of response frameworks to deal with these events.

The objective of emergency management is to systematically analyse and evaluate the potential impacts of extreme events and where necessary, provide risk mitigation treatments and strategies, including forecasts of the residual risk. The risk assessment process informs the production of a risk management plan that identifies mitigation measures that can be integrated into a cohesive emergency management response.

Collectively emergency and disaster management plans capture significant emergency issues including:

- terrorist attack
- marine collision reduction
- fire prevention/protection
- leak detection/minimisation
- release of contaminants
- emergency shutdown systems and procedures.
- emergency situations

### B.22.2 Assessment Framework and Statutory Policies

The following legislation and policies are relevant to the assessment and management of emergencies associated with the PEP and the Port of Townsville.

#### B.22.2.1 State and Commonwealth Work Health and Safety Legislation

Work health and safety legislation at state and Commonwealth levels (Harmonised W&S Legislation) provides the framework to protect the health, safety and welfare of workers at work and of other people who might be affected by the work. Part of this requirement is enacted through s. 43 of both the state and Commonwealth work health and safety regulations, which obligate a person conducting a business or undertaking at a workplace to prepare, implement and maintain an emergency plan. Section 43 of both state and Commonwealth regulations states:

- (1) *A person conducting a business or undertaking at a workplace must ensure that an emergency plan is prepared for the workplace, that provides for the following -*
  - (a) *emergency procedures, including -*
    - (i) *an effective response to an emergency; and*
    - (ii) *evacuation procedures; and*
    - (iii) *notifying emergency service organisations at the earliest opportunity; and*
    - (iv) *medical treatment and assistance; and*
    - (v) *effective communication between the person authorised by the person conducting the business or undertaking to coordinate the emergency response and all persons at the workplace;*

- (b) *testing of the emergency procedures, including the frequency of testing;*
- (c) *information, training and instruction to relevant workers in relation to implementing the emergency procedures.*
- (2) *A person conducting a business or undertaking at a workplace must maintain the emergency plan for the workplace so that it remains effective.*
- (3) *For subsections (1) and (2), the person conducting the business or undertaking must consider all relevant matters including -*
  - (a) *the nature of the work being carried out at the workplace*
  - (b) *the nature of the hazards at the workplace*
  - (c) *the size and location of the workplace*
  - (d) *the number and composition of the workers and other persons at the workplace.*
- (4) *A person conducting a business or undertaking at a workplace must implement the emergency plan for the workplace in the event of an emergency.*

As a 'person conducting a business or undertaking at a workplace' Port of Townsville Limited (POTL) is required to comply with the regulations.

The work health and safety legislation provides these obligations as a contingency to support the 'person conducting a business or undertaking's obligations to provide safe and healthy workplaces through applied risk management. The work health and safety legislation also applies to all project lifecycle phases through design, construction, operation and eventual decommissioning, demolition and disposal (of all or part).

Emergency management for the Project is also inherently linked to:

- state disaster management legislation and plans
- region and city disaster management plans
- Port of Townsville Limited organisational governances, policies, procedures and plans.

The management of an emergency situation is coordinated by the provisions of the *Public Safety Preservation Act 1989*. This act provides for protection of members of the public in terrorist, chemical, biological, radiological or emergencies

#### B.22.2.2 Queensland Disaster Management Legislation

The state *Disaster Management Act 2003* requires the government (delegating to the authority of the State Disaster Management Group to issue the *Queensland State Disaster Management Plan* (SDMG, 2011) and empowers Emergency Management Queensland, Department of Community Safety to maintain the plan.

The *Disaster Management Act 2003* aims:

- (a) *to help communities—*
  - (i) *mitigate the potential adverse effects of an event; and*
  - (ii) *prepare for managing the effects of an event; and*
  - (iii) *effectively respond to, and recover from, a disaster or an emergency situation;*
- (b) *to provide for effective disaster management for the State;*
- (c) *to establish a framework for the management of the State Emergency Service and emergency service units to ensure the effective performance of their functions.*

Guiding principles for the legislation include:

- planning for prevention, preparation, response and recovery
- accounting for both natural and human action events
- assigning local governments with the responsibility for managing disaster events in their area

- supporting and resourcing district and state groups to support local governments to undertake their emergency management responsibilities.

A disaster is defined as:

*A serious **disruption** in a community, caused by the impact of an **event**, that requires a significant coordinated response by the State and other entities to help the community recover from the disruption.*

For the definition:

- **serious disruption** means—
  - (a) loss of human life, or illness or injury to humans; or
  - (b) widespread or severe property loss or damage; or
  - (c) widespread or severe damage to the environment.
- **event** means—
  - (a) a cyclone, earthquake, flood, storm, storm tide, tornado, tsunami, volcanic eruption or other natural happening;
  - (b) an explosion or fire, a chemical, fuel or oil spill, or a gas leak;
  - (c) an infestation, plague or epidemic;
  - (d) a failure of, or disruption to, an essential service or infrastructure;
  - (e) an attack against the state;
  - (f) another event similar to an event mentioned in paragraphs (a) to (e).

### B.22.2.3 State Disaster Management Plan

The *State Disaster Management Plan* (SDMG, 2011) aims to apply the intent of the *Disaster Management Act 2003* and describe the approach to disaster management operations in all events, whether natural or caused by human acts or omissions and provides supplementary hazard specific plans, functional plans and disaster management guidelines.

Under the *State Disaster Management Plan*, disaster management groups are established at local, district and state levels and supported by disaster coordination centres. During operations, when required disaster coordination centres at all levels are activated to:

- coordinate resources
- provide support to disaster management groups
- provide communications between levels and across agencies.

In Queensland, a range of agencies have primary management responsibilities for risks associated with a specific hazard. These are described in Table B.22.1.

**Table B.22.1 Disaster Agencies and Hazard Specific Plans**

Specific Hazard	Primary Agency	State and National Plans
Animal and plant disease	Department of Agriculture, Fisheries and Forestry	<i>Queensland Veterinary Emergency Plan</i> <i>Australian Veterinary Emergency Plan</i> <i>Australian Emergency Plant Pest Response Plan</i>
Biological (human related)	Queensland Health	<i>State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents</i>
Bushfire	Queensland Fire and Rescue Service	<i>Wildfire Mitigation and Readiness Plans (Regional)</i>
Chemical	Queensland Fire and Rescue Service	<i>State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents</i>
Influenza pandemic	Queensland Health	<i>Queensland Pandemic Influenza Plan</i> <i>National Action Plan for Human Influenza</i>

Specific Hazard	Primary Agency	State and National Plans
		<i>Pandemic</i>
Ship-sourced pollution	Department of Transport and Main Roads	<i>Queensland Coastal Contingency Action Plan National Plan to Combat Pollution of the Sea by Oil and Other Noxious and Hazardous Substances</i>
Radiological	Queensland Health	<i>State of Queensland Multi-agency Response to Chemical, Biological, Radiological Incidents</i>
Terrorism	Queensland Police Service	<i>Queensland Counter-Terrorism Plan National Counter-Terrorism Plan</i>

At a state level, disaster risk assessment outcomes have been documented in a state-wide risk register. The *State Risk Register* identifies residual and transferred risk, which identifies gaps and community vulnerability, while highlighting the broader social and economic impacts associated with disasters.

Risk treatments (mitigation) are an outcome of the risk assessment process. The *State Risk Register* can be used to guide the priority development of projects and allocation of funding to projects that will enhance disaster resilient investment across Queensland.

Mitigation may be in the form of:

- design improvements to provide more resilient new infrastructure, update or strengthen existing infrastructure or services
- prepared communities and response agencies and arrangements in place
- resilience activities including partnerships between sectors, community education
- a clear understanding of hazards, their behaviour and interaction with vulnerable elements.

Disaster preparedness is building capability and resilience in the community to ensure that all functions and services that are needed to better manage the consequences of a disaster can do so. Preparedness should start in the community, but applies equally to government, non-government organisations, industry and commerce. Preparedness includes:

- community education and awareness
- resilience
- disaster management planning
- training and education
- exercises
- communication.

The *State Disaster Management Plan* provides a summary of the state disaster management operations diagram (Appendix V1). The PEP will operate in the City of Townsville and is assigned to the Townsville Disaster District.

In the event of declaration of an emergency, an emergency response phase is evoked. The response phase of disaster management involves the conduct of activities and appropriate measures necessary to respond to an event. Response is undertaken as a component of disaster operations being those activities undertaken before, during and after an event to help reduce loss of human life, illness or injury to humans, property loss or damage, or damage to the environment, including, for example, activities to mitigate the adverse effects of the event.

Functional planning for disaster management and response matters is provided at a state government departmental level as shown in Table B.22.2. Specific roles and responsibilities are further expanded in the *State Disaster Management Plan*.

**Table B.22.2 Queensland Government Departmental Responsibilities**

Function	Functional Lead Agency <sup>1</sup>
Building and engineering services	Department of Public Works
Communications services	Department of Public Works
Electricity, fuel and gas supply	Department of Energy and Water Supply
Emergency supply	Department of Public Works
Health services	Queensland Health
Public information	Department of the Premier and Cabinet
Transport systems	Department of Transport and Main Roads
Warnings	Department of Community Safety
Economic recovery	Department of Employment, Economic Development and Innovation
Environmental recovery	Department of Environment and Resource Management
Human-social recovery	Department of Communities
Infrastructure recovery	Department of Local Government and Planning

<sup>1</sup> Agency names are as listed in the *State Disaster Management Plan*. Some names have recently changed.

The *State Disaster Management Plan* extends beyond management of the conditions associated with the initiating emergency event. The recovery phase of disaster management involves disaster relief; being the provision of immediate shelter, life support and human needs to persons affected by, or responding to, a disaster; and the broader disaster recovery; being the coordinated process of supporting affected communities in the reconstruction of the physical infrastructure, restoration of the economy and of the environment, and support for the emotional, social, and physical wellbeing of those affected. Recovery is undertaken as a component of disaster operations (Appendix V1).

The *State Disaster Management Plan* includes a final element, being post-disaster assessment. This provides essential information from the examination of the effectiveness of mitigation measures, an analysis of the state of preparedness in readiness for the impacts of a disaster, of the disaster operations themselves and extends into the effectiveness of recovery.

#### B.22.2.4 Townsville District Disaster Management Plan

In accordance with the *State Disaster Management Plan* and to meet the object of the *Disaster Management Act 2003* to devolve responsibility to local government, the Townsville District Disaster Management Group (TDDMG) has produced the *Townsville District Disaster Management Plan*.

The objectives of the *Townsville District Disaster Management Plan* are to:

- facilitate the implementation of effective and efficient disaster management strategies and arrangements
- develop, review and assess the effectiveness of disaster management for the district including arrangements for mitigating, preventing, preparing for, responding to and recovering from a disaster
- comply with the State Disaster Management Group's *Strategic Policy Framework*, the *State Disaster Management Plan*, the *District Disaster Management Guidelines* and any other guidelines relevant to district level disaster management
- develop, implement and monitor priorities for disaster management for the district
- detail information management processes
- strengthen partnerships in providing disaster mitigation
- align with contemporary disaster management practices
- provide for business continuity arrangements
- maintain consistency with the requirements for disaster planning as contained in the *Disaster Management Act 2003* and associated guidelines.

The *Townsville District Disaster Management Plan* covers the local council areas (Figure B.22.1) of:

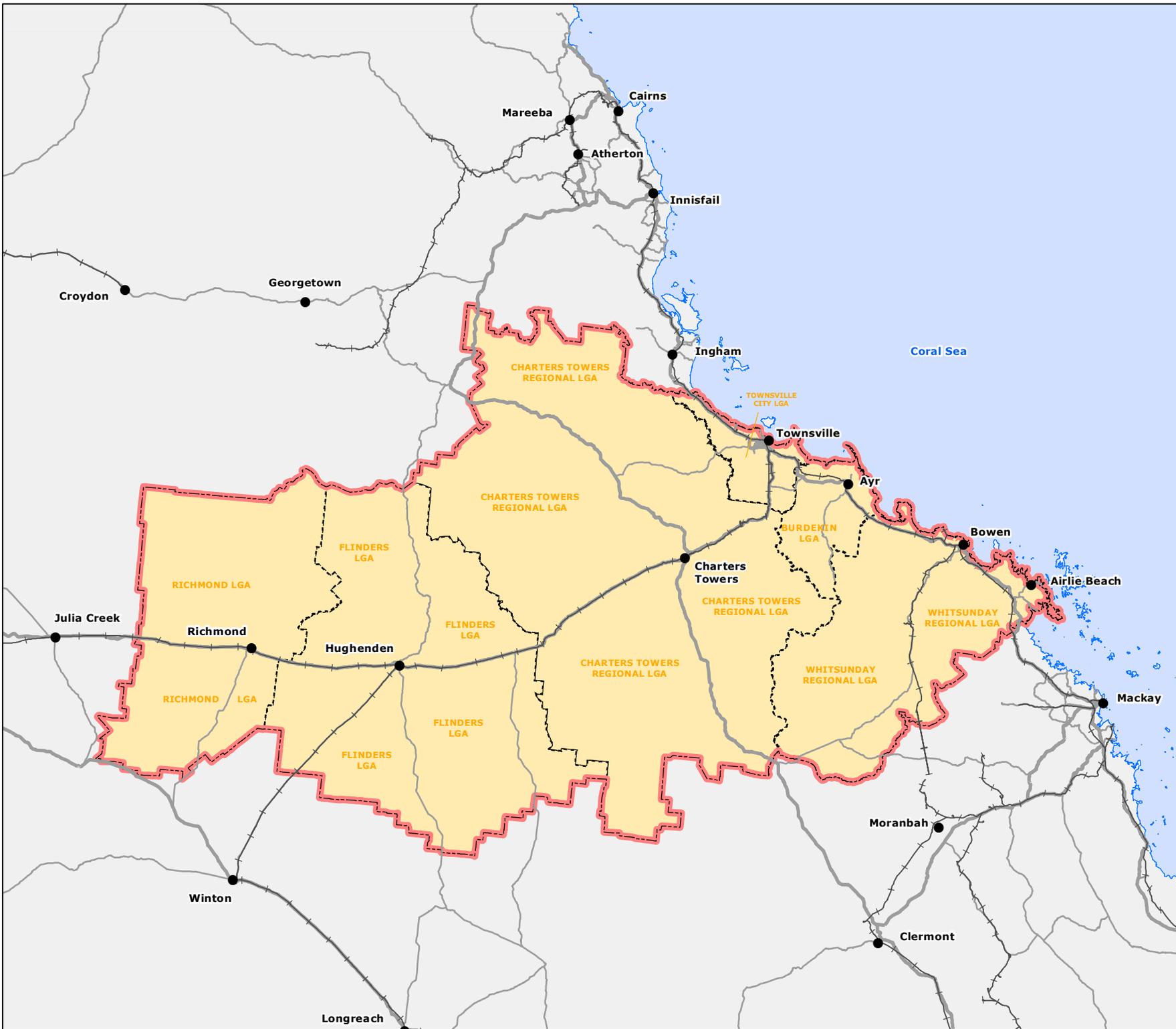
- Hinchinbrook

- Palm Island
- Townsville
- Burdekin
- Charters Towers
- Flinders and Richmond.

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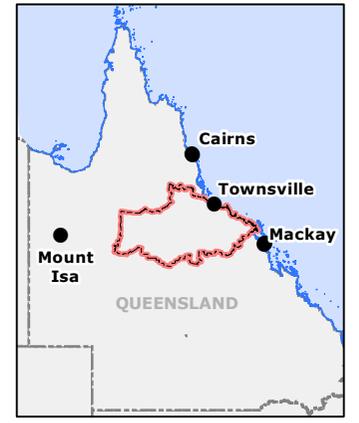
Townsville Disaster District

Figure B.22.1



**Legend**

- Localities
- Highways
- Main Roads
- Main Railway Lines
- Local Government Areas
- ▭ Townsville Disaster District



Scale: 1:4,000,000 (when printed at A4)

0 25 50 100 150  
Kilometres

PROJECT ID 60161996  
LAST MODIFIED CFS 05-Oct-2012  
FILE NAME 60161996\_PLN\_123  
Data Source:  
StreetPro © 2010 Pitney Bowes Software Pty Ltd  
Roads, Parks - © 2010 PSMA Australia Pty Ltd  
Townsville Disaster District - NRW LGA 2009

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Collectively, the Townsville Disaster District has a population of more than 230,000, with approximately 80% of the inhabitants residing in Townsville City Council. While potential impacts are likely to focus primarily on Townsville City Council, the councils of Hinchinbrook, Palm Island and Burdekin connect Townsville City Council by sea and Charters Towers Regional Council adjoins to the west of Townsville City Council. The *Townsville District Disaster Management Plan* is informed by a systematic evaluation and assessment of risk for disaster events which include:

- flood
- tropical cyclones
- storm tide (surge)
- tsunami
- landslide
- dam breach
- emergency animal disease
- terrorism
- earthquake
- bushfire
- transport incident
- chemical/fuel/oil spill

The *Townsville District Disaster Management Plan* refers to threat specific plans relevant to the PEP. These include:

- Department of Transport (Maritime Division) – *Oil Spill Contingency Plan*
- Department of Employment Economic Development and Innovation – *Emergency Animal Disease*
- *Queensland Biosecurity Strategy*
- Queensland Fire and Rescue Service – *Wildfire Contingency Plan*
- Port of Townsville: *Oil Spill Contingency Plan*
- *Queensland Coastal Contingency Action Plan*
- *NQ Water: Ross River Dam: Emergency Action Plan*
- *Burdekin Dam Action Plan*
- *Tropical Cyclone Storm Tide Warning Response System*
- *National Storm Tide Mapping Model for Emergency Response*

As noted elsewhere, the names of the agencies are in accordance with those identified in the plans, but a number of these have recently been renamed and some responsibilities have been reallocated between some of the new agencies.

The *Disaster Management Act 2003* provides for the establishment of Local Disaster Management Groups (LDMG) to support the development of strategies to facilitate prevention, preparedness, response and recovery. The Act also provides for the creation of District groups to support the LDMG through the coordination of wider resources. This is articulated through the Townsville District Disaster Management Plan. Functional responsibilities of Queensland government departments are aligned with those described previously in Table B.22.2 and are adjusted to align with the needs of the LDMG.

The *Townsville District Disaster Management Plan* also incorporates a framework for reviewing emergency plans that will have benchmark applications for organisational plans developed in support of governance arrangements of the PEP.

#### B.22.2.5 Port of Townsville Emergency Management Governance and Policy

POTL maintains its own emergency management processes incorporated in an Integrated Management System. Specifically these include but are not limited to:

- *Emergency Management Plan* risk assessments
- emergency response plans covering port precincts, cyclones, fire and oil spills
- emergency notification system and emergency evacuation procedures
- ship emergency and general information

Additionally, POTL has established an Emergency Management and Emergency Risk Management Committee with responsibility to assess, monitor and review hazards having the potential to impact port operations.

#### B.22.2.6 Application of Australian Standards

Australian and international standards provide guidance for determining the practicability of risk treatment(s), advice on acceptable and recommended practice, and information for decision making.

The following Australian standards and guidelines are relevant to this assessment:

- *AS/NZS ISO 31000:2009 Risk management – principles and guidelines* (Standards Australia, 2009)
- *AS 3745-2010 Planning for emergencies in facilities* (Standards Australia, 2010)
- *CS FP 001-1995 Fire emergency response* (Standards Australia, 1995)
- *AS 1678 (Series):1999 Emergency procedure guide – transport* (Standards Australia, 1999)
- *AS 1670 (Series) Fire detection, warning, control and intercom systems* (Standards Australia, 2004b)
- *AS 3846:2005 The handling and transport of dangerous cargoes in port areas* (Standards Australia, 2005a)
- *Handbook 203:3006 Environmental risk management – principles and processes (HB203:2006)*
- *HB 76:2010 Dangerous goods - initial emergency response guide*
- *Handbook 76:2010 Dangerous goods - initial emergency response guide (HB 76:2010)*

#### B.22.3 Existing Values, Uses and Characteristics

POTL emergency response and management governance cover proposed works associated with the PEP. The organisational approach to emergency response and management is underpinned by POTL policies stating commitment to:

- providing a safe port
- preventing all workplace injuries and illnesses
- ensuring all employees and others on port land are safe

POTL has a proven capability to respond to and manage emergency conditions associated with its present operations. Changes associated with the delivery of the PEP will require variation and modification of existing provisions to suit the nature of proposed work, risk of catastrophic or natural events and degree of preparedness required to mitigate the risk.

The additional layers of disaster management planning at a local, regional and state levels as required by the *Disaster Management Act 2003* reinforce organisational plans and processes for emergency response and management. Processes at all three levels (organisation, locally, district and state) are aligned in their objectives to:

- mitigate the potential adverse effects of an event
- prepare for managing the effects of an event
- effectively respond to, and recover from, a disaster or an emergency situation.

### B.22.4 Assessment of Potential Impacts

The guiding standard for preparation of state and district disaster management plans, the *National Emergency Risk Assessment*, presents consequence and likelihood values that differ significantly to the consequence values commonly used in the work health and safety context. These values along with disaster impact definitions are shown in Appendix V2.

The adequacy of risk treatments for emergency response and management at the organisation level are informed by statutory requirements, mainly the *Work Health and Safety Act 2011* with guidance from *AS3745:2010 Planning for emergencies in facilities* (Standards Australia, 2010) . Catastrophic event and disaster risks potentially impacting on the PEP are also treated holistically through the overlay of, as applicable, the *State Disaster Management Plan*.

The *State Disaster Management Plan*, while taking a risk assessment based approach to understand the state's risk exposure, takes an 'all hazards' approach, meaning the functions and activities applicable to one hazard are most likely applicable to a range of hazards and consequently a disaster management plan captures the functions and activities applicable to all hazards. The plan addresses delivery of its model underpinned by the principles of prevention, preparedness, response and recovery, and focusses on implementation, operation and effectiveness facilitated by approaches centred around:

- all agencies approach
- use of local (district) disaster management capability
- establishing a prepared and resilient community.

At the regional level, disaster emergency interventions require more risk detail to establish priorities, prepare plans and allocate resources. The *Townsville District Disaster Management Plan* summarises the main disaster hazards (not ranked) for the area to be:

- by natural event
  - flood
  - tropical cyclones
  - storm tide (surge)
  - tsunami
  - landslide
  - emergency animal disease
  - earthquake
  - bushfire
- by human interaction event
  - dam breach
  - terrorism
  - transport incident
  - chemical/fuel/oil spill

#### B.22.4.1 Potential Impacts

The risk assessment for issues identified by both POTL and the Townsville Disaster Management Group is summarised in Table B.22.3, describing the source of the emergency event, the potential hazard arising, and the rating of risk significance based on the analysis of consequential impacts and the likelihood of occurrence. Outcomes of the assessment are discussed below.

**Table B.22.3 Combined Emergency Event Risk Analysis (TDDMG and Port of Townsville)**

Reference	Source of Emergency	Hazard	Likelihood	Consequence	Initial Risk
TDDMG	Natural event	Flood	Unlikely	Minor	Low
TDDMG	Natural event	Tropical cyclones	Likely	Catastrophic	Extreme
TDDMG	Natural event	Storm tide (surge)	Possible	Major	High
TDDMG	Natural event	Tsunami	Rare	Minor	Low
TDDMG	Natural event	Landslide	Rare	Insignificant	Low
TDDMG	Natural event	Animal disease emergency	Possible	Major	High
TDDMG	Natural event	Earthquake	Rare	Catastrophic	High
TDDMG	Natural event	Bushfire	Rare	Insignificant	Low
TDDMG	Human interaction event: intentional	Terrorism	Possible	Catastrophic	High
TDDMG	Human interaction event: incidental	Dam breach	Rare	Catastrophic	High
TDDMG	Human interaction event: incidental	Transport incident	Unlikely	Major	Medium
TDDMG	Human interaction event: incidental	Chemical/fuel/oil spill	Unlikely	Major	Medium
Port of Townsville	Human interaction event: incidental	Fire (ship/berth/land)	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Oil spill	Unlikely	Major	Medium
Port of Townsville	Human interaction event: incidental	Utility failure	Possible	Moderate	High
Port of Townsville	Human interaction event: incidental	Channel blockage	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Structural damage to pier or wharf	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Infectious disease	Possible	Moderate	High
Port of Townsville	Human interaction event: intentional	Terrorist incident	Possible	Catastrophic	High
Port of Townsville	Human interaction event: incidental	Dangerous goods spill (other than oil)	Unlikely	Moderate	Medium
Port of Townsville	Human interaction event: incidental	Gas escape	Unlikely	Moderate	Medium
Port of Townsville	Human interaction event: incidental	Crane collapse	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Marine incident (grounding or collision)	Possible	Moderate	High
Port of Townsville	Human interaction event: incidental	Industrial incident	Possible	Moderate	High
Port of Townsville	Human interaction event: incidental	Explosion	Rare	Catastrophic	High
Port of Townsville	Human interaction event: intentional	Bomb threat	Likely	Insignificant	Medium
Port of Townsville	Natural event	Severe storm event (includes cyclone)	Likely	Catastrophic	Extreme
Port of Townsville	Human interaction event: incidental	Road/rail incident	Possible	Major	High

Reference	Source of Emergency	Hazard	Likelihood	Consequence	Initial Risk
Port of Townsville	Human interaction event: incidental	Aircraft incident	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Quarantine incident	Possible	Moderate	High
Port of Townsville	Human interaction event: intentional	Hostage situation	Rare	Major	Medium
Port of Townsville	Human interaction event: incidental	Radioactive material leak	Rare	Moderate	Medium
Port of Townsville	Natural event	Flooding	Unlikely	Minor	Low

#### B.22.4.2 Natural Events

Both POTL and the TDDMG rank flooding as a low risk. High intensity rain events (typically associated with cyclones) can result in flooding of the Ross River and catchment, which may impact the PEP. The main effects of these events are likely to impact works in the south-eastern precinct of the PEP adjacent to the mouth of the Ross River. Flooding from a catastrophic breach of the Ross River Dam may have both direct and collateral impacts on the PEP. To a lesser degree, release of water from the Ross River Dam during flood management may have some impact, depending on management of the rate and volume of water released.

Tropical cyclones are historically the most severe natural events with the potential to result in a fatality in Queensland. Cyclones carry disaster risks associated with damaging wind, damaging waves/tides/currents, water inundation and riverine flooding. Townsville is in a region of Australia with known experience of impact from cyclones (both direct and cyclones in the region delivering consequential damage), which may impact on the PEP and its lifecycle phases.

Animal disease risk constitutes a threat to Queensland and Australia. As a port of entry to and exit from Australia the Port of Townsville carries the associated risk of impact. Additionally, being located in a tropical area increases the potential threat associated with various tropical diseases and infections. The continuity of port operations during the construction of the PEP means that animal disease impacts have the potential to occur over the lifecycle of the PEP.

Other natural events, linked with tsunami risk, landslides, earthquakes and bushfires carry a lower threat of impact to the PEP.

#### B.22.4.3 Human Interactions

Human interactions relate to major and significant events resulting in emergency response management. These may relate to the built environment or social behaviour where control is lost (through design or degree of human action) resulting in damage.

Structural failure of utilities and the Ross River Dam are recognised as high risk potential factors with the potential to impact on Townsville, its port and the PEP.

Terrorist attack also presents a recognised potential threat. Consequential impacts may be incurred by PEP across each of its phases (this aspect is further discussed in Chapter B21).

Industrial fire (shipboard, berth or land bound/building) presents a risk and potential impact for operations.

Road, rail and waterway transport links connect and traverse the Port of Townsville. The port is in the flight path of the secondary runway of Townsville airport and is likely to be beneath the south-bound bank area (turn) of aircraft departing the primary runway of the airport. A variety of transport threat scenarios exist and as such present impact potential for the PEP.

The Port of Townsville has a variety of statutory defined 'major hazard facilities' operating in the precinct. Additionally, hazardous materials are also transported through the port by sea, road and rail in bulk quantities and have an increased impact potential for the Project. The location of any potential hazardous material and dangerous good stores associated with the PEP is unable to be detailed at this phase of the project.

### B.22.5 Mitigation Measures and Residual Impacts

#### B.22.5.1 Mitigation Measures

POTL has considered and assessed risks associated with disaster and catastrophic events as part of its ongoing operation of the port. Based on this, the organisation has prepared and implemented various governances, procedures and plans for emergency management of situations that may potentially arise from its business and operational responsibilities.

The PEP has various potential impacts integral to its own operations. It will also be subject to potential impacts associated with natural and human initiated disaster impacts by reason of its geographical location. Mitigation and management of additional potential impacts would be dealt with through incorporation into existing emergency management measures implemented by POTL. The specific location for emergency management areas within the PEP (for example, incident control points,

firefighting equipment) is unable to be detailed at this phase of the project. Emergency management measures will be compliant with the Environment Management Plans detailed in Part C of this EIS.

Mitigation of disasters and catastrophic impacts are also addressed at district and state levels through the respective disaster management groups delivering plans and programs for prevention, preparedness, response and recovery. Delivery is coordinated through the 'all agencies' program across Commonwealth, state and local governments. In these structures there is scope for interplay between organisations and regional disaster management groups. Mitigation of potential impacts on the PEP would be by way of a review of existing disaster plans and amendment, as required, to ensure an integrated and holistic approach to these matters is maintained.

Personnel involved in design, construction, operational and decommissioning phases of the Project will need to be engaged and fully understand the emergency response and management processes and requirements in the context of:

- natural and human interaction disaster risks and impacts
- Port of Townsville Limited's governances
- procedures and plans for emergency management
- TDDMG and the group's regional disaster plan
- Emergency Management Queensland and the *State Disaster Management Plan*.

#### B.22.5.2 Residual Impacts

The risks presented in Table B.22.3 show that risk levels range from low to extreme. Initial risk levels, as shown by the risk assessment, can have the potential to cause major impacts. Emergency and disaster management plans play an important role in safeguarding against the consequence of these risk events occurring and restoration of services post-event occurrence, particularly in situations that have a likely occurrence, such as cyclones.

Indirect and cumulative impacts can also arise. For example, industrial fire or a significant chemical spill present the potential for direct (immediate area contamination) and indirect (smoke and fume contamination to the community and environment) impacts. Construction infrastructure damaged during cyclone (e.g. temporary bulk fuel storage), may impact the Project directly (by loss and recovery) but also has the potential to indirectly impact on the community, waterways and environment through spillage contamination.

As many emergency management impact mitigation actions centre on behaviour and procedural requirements, over time and with repeated exposure to low consequence events, this may result in complacency and reduced effectiveness of emergency response processes. For example, frequent experience with management of low level natural events (e.g. flooding) may diminish exposed persons' readiness to respond to rare but more severe events. Formal procedures, communication and education (including practice) are essential to maintain the reliability of emergency response mitigation measures and plans.

These residual risks are prominent for activities associated with change, as well as disaster conditions arising from situations of rapid and often unpredictable changes to normal operating conditions. As such, risk and mitigation assessments undertaken that pertain to emergency management will consider the potential for indirect and cumulative impacts.

#### B.22.6 Assessment Summary

The Project lifecycle spans all aspects from concept initiation to design through construction, commissioning, operation and ultimately decommissioning. Impacts with catastrophic consequence potential for the Project cover natural and human interaction events. In particular tropical cyclones were identified as a significant source of emergency hazard. Human interaction events such as utility and dam failures, terrorism, and industrial incidents were also noted as potentially significant initial risks.

Emergency management planning for the port follows formal processes structured on the principles of *AS 3745-2010 Planning for emergencies in facilities* (Standards Australia, 2010) and governances used have been independently audited and accredited. These approaches are consistent with current industry practice for emergency management.

There are a number of statutory obligations for POTL for design, construction, operation and decommissioning. Provision of emergency management processes, as covered in the *Work Health and Safety Regulations 2011*, is an included aspect of these obligations.

POTL recognises the need to meet its obligations in respect of work health and safety, environmental and other regulatory areas by instigating appropriate corporate governances and responsibilities to inform and direct compliance. This extends to its contribution to the district and state disaster management strategies, which will continue during the construction and operation of the PEP

Emergency and disaster management plans form part of the larger risk management process in dealing with hazards and risks associated with the port environs, which is linked to POTL's corporate risk management process. Other contexts such as the Port of Townsville Health and Safety Management System, Environmental Management System and security and management of critical infrastructure provide important elements to mitigation of consequences arising from emergency events.