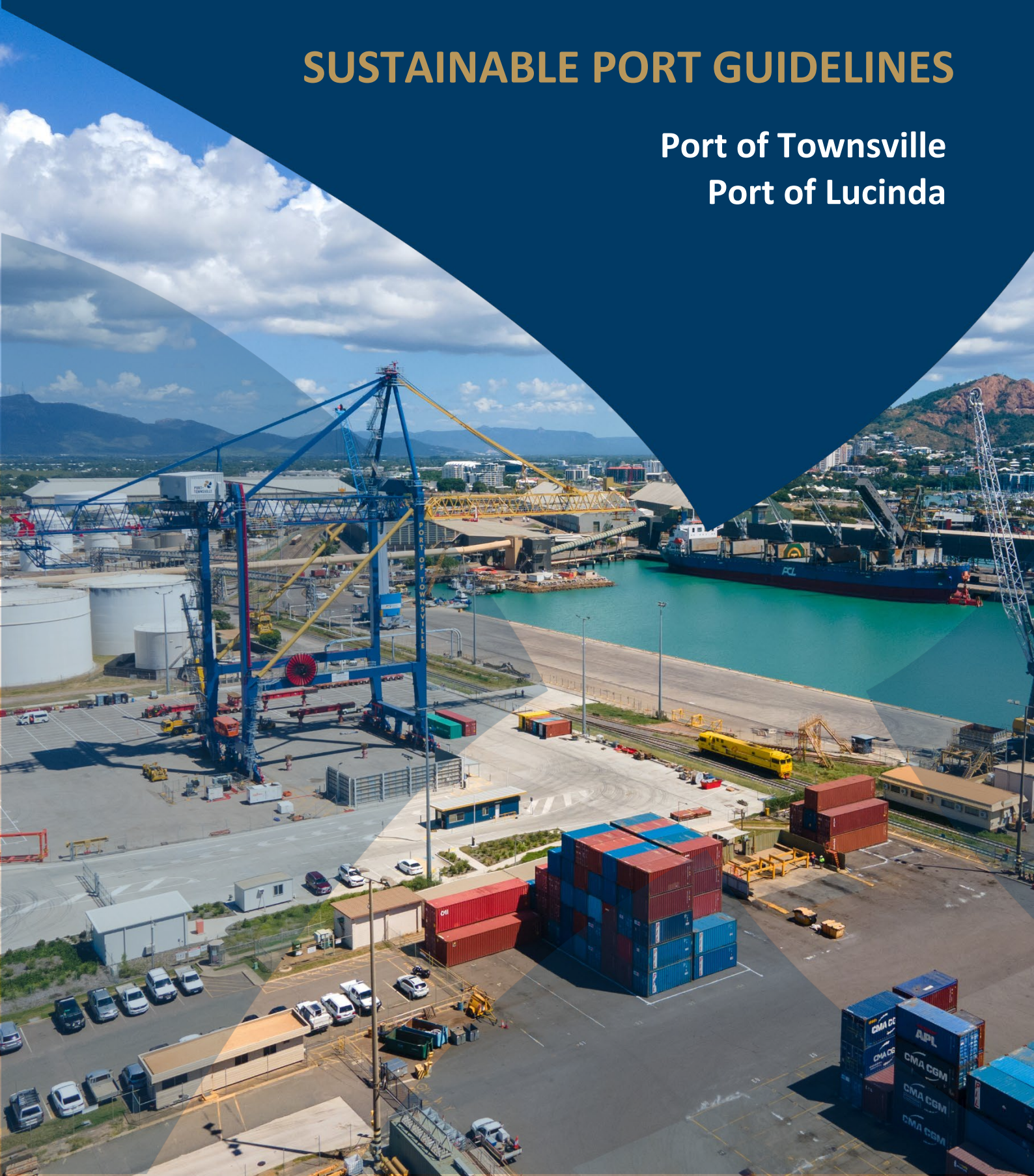
PORT OF TOWNSVILLE
delivering sustainable prosperity

SUSTAINABLE PORT GUIDELINES

Port of Townsville
Port of Lucinda



Document Control Sheet

POT2376 Revision history

Revision No.	Effective Date	Comments
0	3/05/2022	Original document

CONTENTS

DEFINITIONS AND ACRONYMS

The terms used in these Guidelines have the meaning provided to them in Queensland's legislation and the commentary below. Where there is inconsistency between Queensland's legislation and the commentary below, Queensland legislation prevails.

AASS	Actual Acid Sulphate Soils
AEP	Annual Exceedance Probability
ADAC	Asset Design and As Constructed data
AHD	Australian Height Datum This is the mean sea level for 1966-1968, which was assigned a value of 0.000 m on the Australian Height Datum (AHD) on 30 tide gauges around the coast of the Australian continent by Geoscience Australia.
AQIS	Australian Quarantine Inspection Service
AS	Australian Standards
BCA	Building Code of Australia
Building	As per the definition under the Planning Act 2016: (a) a fixed structure that is wholly or partly enclosed by walls and is roofed; or (b) a floating building; or (c) any part of a building.
Building footprint	area of a site that it covered by the structure at ground level
Building height	vertical distance from the ground datum to the highest point of the building.
CEMP	Construction Environmental Management Plan
Contaminant	As per the definition in the *Environmental Protection Act 1994*, a contaminant can be— a. a gas, liquid or solid; or b. an odour; or c. an organism (whether alive or dead), including a virus; or d. energy, including noise, heat, radioactivity and electromagnetic radiation; or e. a combination of contaminants.
Contamination	As defined in the *Environmental Protection Act 1994*, contamination of the environment is the release (whether by act or omission) of a contaminant into the environment.
Demountable building	Prefabricated structures produced off site and transported to the site.
CLR	Contaminated Land Register
Crossover	means the area where a site connects to the public roadway.
DES	Department of Environment and Science
DTMR	Department of Transport and Main Roads
DSDILGP	Department of State Development, Infrastructure, Local Government and Planning
DSDSATSIP	Department of Seniors, Disability Services, and Aboriginal and Torres Strait Islander Partnerships
DAF	Department of Agriculture and Fisheries
Development	As per the definition under the *Planning Act 2016*: Development is any of the following— (a) carrying out— (i) building work; or (ii) plumbing or drainage work; or (iii) operational work; or (b) reconfiguring a lot; or (c) making a material change of use of premises.
Detention / Retention Storage Basin	A storage pond, basin or tank used to reduce and attenuate the peak discharge within a drainage system.
DWT	deadweight tonnage

EMP	Environmental Management Plan
EMR	Environmental Management Register
Environmental nuisance	As per the definition provided in the *Environmental Protection Act 1994*
ESA	Equivalent Standard Axle.
Environmental Values	The actual or potential function carried out by the water body (For more information on environmental values, refer to the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019).*
Flood	The temporary inundation of land by expanses of water that overtop the natural or artificial banks of a watercourse.
Floodable Land	Land affected by one of the following flood sources: • Ross River; • Ross Creek; • localised overland flow paths; • designed open channels; • localised flooding; • storm tide surge.
Filling/ excavation	means removal or importation of material to or from a lot that will change the ground level of the land.
Freestanding sign	a permanent sign that is self-supporting in a fixed location and not attached to a building. Freestanding signs include, but are not limited to, monument signs, pole signs, and pylon signs.
Ground level	the existing level of the site providing it has not been unlawfully altered; or where the land has been unlawfully altered the level of land prior to the alteration; or the 'as-constructed' level of the land in accordance with an approval for filling and excavation.
Gross Floor Area (GFA)	Means a total floor area of a building or buildings on the site inclusive of walls, columns and balconies of all stories of every building located on the site.
GRT	Gross Register Tonnage
HAT	Highest Astronomical Tide
HAZOP	Hazard and Operability Study
IPWEAQ	Institute of Public Works Engineering Australasia Queensland
kWr	means kilowatts of refrigerating effect i.e. power consumption of the AC unit
Land Disturbing Development	Any carrying out of building work, plumbing or drainage work, operational work or subdivision where there is potential for accelerated erosion from wind or water and/or the discharge of sediment to drains or waterways.
LDGF	Large Dangerous Good Facility
Loadout area	an area for loading and unloading vehicles.
LOC	Land Owner Consent
Localised Flooding	Includes localised overland flow paths and localised ponding.
Localised Overland Flow Paths	Drainage lines that convey stormwater runoff, from any storm, before it enters a creek or waterway network. Overland flow paths, in general, are not part of river, creek or waterway flooding and by nature are dry except during storm events.

Localised Ponding	Occurs in naturally low-lying areas where overland flows from localised storms (of any frequency) collects and creates a temporary detention storage. Water from these ponded areas then slowly drains through stormwater drainage pipes or other waterway networks. These ponded areas are usually dry except during and immediately after storm events.
Light Pollution	Light pollution is defined as the alteration of natural light levels in the night environment produced by the introduction of artificial light.
LUP	Land Use Plan for either Townsville or Lucinda depending on context
Major Drainage System	Part of a drainage system in a catchment which is designed to convey major design storms e.g. 1% AEP event (unless advised otherwise). The system may comprise open space, floodway channels, road reserves, pavement expanses, overland flow paths and detention basins.
MHF	Major Hazard Facility
Minor Drainage System	Part of a drainage system in a catchment that controls flows from the minor design storm e.g. 39% AEP and 10% AEP events. The system usually comprises kerbs and channels, roadside channels, gully inlet pits, underground pipes, junction pits, manholes and outlets.
MSQ	Department of Maritime Safety Queensland
Natural Channel Design	The basic principles of natural channel design are to maintain the hydraulic conveyance requirements of engineered or natural channels, while improving environmental values.
NCC	National Construction Code. The BCA is Volume 1 in this Code.
OEMP	Operational Environmental Management Plan
PASS	Potential Acid Sulphate Soils
PDI	pre-delivery inspection area
P&ID	Piping and Instrumentation Diagram
PMHF	Possible Major Hazard Facility
Pole sign	A freestanding sign that is supported by one or more structural supports less than 1/4 the width of the sign face.
Port	Port of Townsville Limited
Port lessee	means an entity declared to be the Port lessee under section 289Y of the TIA.
Proponent	The applicant (or principal where a consultant submits an application on behalf of a principal) who is seeking approval for development on Port land or waters
Pylon sign	A freestanding sign that is supported by one or more structural elements which are architecturally similar to the design of the sign i.e. any support poles are covered to the ground.
QUDM	Queensland Urban Drainage Manual
Receiving Waters	A body of water (including a wetland) within or downstream of the development that has environmental values. This does not include structures provided for the purpose of stormwater management that have no other statutory functions (e.g. recreation).
Receiving environment	Means the environment immediately, or in close proximity to the development and/or its operations, e.g. the waterway to which stormwater discharge or overland flow is directed.
Referenced Standards	The following standards:

	• Australian Runoff Quality – A guide to Water Sensitive Urban Design (Engineers Australia, National Committee for Water Engineering); • Australian Rainfall and Runoff (Engineers Australia, National Committee for Water Engineering); • Natural Channel Design Guidelines (Brisbane City Council); and • Queensland Urban Drainage Manual (Department of Environment and Resource Management).
RoRo system	(roll on/ roll off) to carry out efficient and economic loading and unloading of ships.
RPEQ	Registered Professional Engineer of Queensland
SARA	State Assessment and Referral Agency
Sensitive receptors	As per the definition provided in the *Environmental Protection Act 1994*
SMP	Stormwater Management Plan - a plan that identifies potential on and off site (upstream, downstream and adjacent properties) impacts associated with stormwater for a development. The SMP also identifies the range of stormwater management strategies and actions for water quality and environmental issues.
SPL	Strategic Port Land
SPP	State Planning Policy
SQID	Stormwater Quality Improvement Device
Storm surge	localized change in ocean water levels caused by high winds and reduced atmospheric pressures associated with a storm event
Suitably qualified	a formal qualification and or membership with a professional body
TIA	*Transport Infrastructure Act 1994*
Water Quality Objectives	measurable long-term goals for the quality of receiving waters (For more information on environmental values, refer to the *Environmental Protection (Water and Wetland Biodiversity) Policy 2019).*
Water Sensitive Design Principles	Those principles detailed by the Referenced Standards.
Water Sensitive Urban Design	Means the effective and responsible management of water. Water sensitive urban design promotes the following: a) the protection of natural systems; b) the protection of water quality; c) the integration of stormwater treatment into the landscape; and d) the storage and reuse of stormwater
WHSQ	Workplace Health and Safety Queensland

1. INTRODUCTION

Port of Townsville Limited ('Port') is a Queensland Government Owned Corporation responsible for the development and management of the declared Ports of Townsville and Lucinda.

The Port's operations and facilities are vital to the economic development of Northern Queensland, in particular the Mount Isa to Townsville Corridor, Herbert and Burdekin regions and the Townsville and Hinchinbrook local government areas in which the Ports of Townsville and Lucinda physically operate. Townsville Port is the largest base minerals, fertiliser and sugar Port in Australia and the largest container and automotive Port in Northern Australia.

The Townsville Port imports containers and general cargo, motor vehicles, tyres, as well as bulk products such as cement, sulphuric acid, fertiliser, sulphur, zinc concentrate and petroleum products. It exports general cargo, containers, timber, cattle, tallow, refined metal products, as well as bulk products sugar, molasses, fertiliser and mineral concentrates (zinc, copper, lead).

The Port of Lucinda exports raw sugar grown in the Herbert district.

As Northern Australia continues to develop, the Port is continuing to evolve and expand. This is demonstrated by the Channel Upgrade project which will widen the channel to enable safe passage for larger vessels to enter/exit the Port.

Port Vision 2050

Our vision is to be Australia's Port for the future creating value for our customers and shareholders and prosperity for our communities and value for our customers and shareholders, through world-leading sustainable operations. Our values are:

PARTNERSHIPS	**We build meaningful and lasting relationships**
OPPORTUNITY	**We continuously innovate**
RESPECT	**We respect each other**
TRUST	**We do the right thing**

Port Vision 2050 is our 30-year sustainability plan and contains 12 strategic objectives and 27 initiatives to do more - for our planet, our community, our people and for the prosperity of our region. By aligning our objectives and initiatives with the Sustainable Development Goals we have a unique opportunity to demonstrate how our actions can make a significant contribution to a broader global agenda. By focusing on what is important we can ensure we can continue to deliver sustainable prosperity for our region. These initiatives will assist us in delivering sustainable prosperity for our communities, our customers, our people and our planet. The details of Port Vision 2050 can be found on the Port's website.

We operate in one of the most unique and diverse environments in the world. On the doorstep of the Great Barrier Reef, our local ecosystems present biodiversity at its best. As Great Barrier Reef Ports, we appreciate that climate change is a significant threat to the Great Barrier Reef and are committed to being climate positive by 2050. We will invest in renewable energy and deliver smart and sustainable infrastructure using our precious resources efficiently. By working together as a Port community, we can make a positive difference for the unique and sensitive environment that we operate in.

2. PURPOSE OF THE GUIDELINES

The Sustainable Port Guidelines (Guidelines) detail specific requirements and next level guidance to ensure that developments within the Port contribute to the Port Vision commitments. The Port has developed these Guidelines to compliment the Land Use Plans (LUPs) and development codes. These Guidelines should therefore be read in conjunction with the LUPs.

The Port is responsible for establishing land use planning and development assessment frameworks that ensure effective and efficient development within the Ports of Townsville and Lucinda. A LUP is the primary planning instrument for Strategic Port Land (SPL) pursuant to the *Transport Infrastructure Act 1994*.

Additionally, the Port of Townsville has been determined as a 'Priority Port' pursuant to the *Sustainable Ports Development Act 2015* and the LUP aligns with the *Master plan for the Priority Port of Townsville (Master plan)* and the subsequent Port Overlay for the Priority Port of Townsville (Port Overlay).

SPL is not subject to the local Council planning scheme, as such the LUP is utilised by the Port to assess and manage new development by establishing a planning framework that identifies desired outcomes sought to be achieved on Port land, the identification of land use precincts and preferred land uses as well as introducing supporting development codes. By implementing the LUP, the Port seeks to facilitate development that is ecologically sustainable and addresses the existing and emerging needs of the Townsville region and key Port stakeholders.

The Guidelines provide standards and requirements for development at the Ports of Townsville and Lucinda. The Guidelines have been developed to ensure an appropriate standard of new development and on-going maintenance of development on SPL. The Guidelines encourage the incorporation of sustainable development principles and innovative design into new developments to ensure developments contribute to the achievement of Port Vision 2050. The objectives of these Guidelines are to:

a) ensure a consistent high standard of development;
b) provide a safe working environment;
c) protect environmental values of the Port and minimise environmental impacts of developments in the Port and on surrounding environmental values; and
d) incorporate appropriate sustainability measures into developments.

2.1. Relationship with other documents

These Guidelines have been prepared to support the LUP for each Port and are ancillary to the LUP. The LUPs are statutory documents which are available on Port's website, however the Guidelines is a non-statutory document. The Guidelines do not override the LUP or Australian Standards or legislation. If there is any inconsistency between the Guidelines and the LUP or Australian Standards / legal requirements, the latter prevails.

3. HOW TO USE THE GUIDELINES

The Guidelines outline the key objectives sought for each area of assessment and then provide standards acceptable to meet these objectives.

The "Specific requirements" listed represent the minimum standard required for new development. Project proponents proposing development on Port land need to prepare their development proposal to comply with these minimum requirements.

This document also includes additional measures that are listed as "Next level guidance" – these measures are not mandatory, but proponents are encouraged to consider these in their project design as measures to improve the sustainable performance of their development. Such measures complement, but go beyond, the listed specific requirements.

Furthermore, the Port encourages innovation. If a proponent is seeking approval for alternative development standards to those presented in this document, information must be provided detailing how the alternative criteria will achieve or exceed the stated objectives in this document.

Proponents need to provide sufficient information to demonstrate how their proposal complies with the requirements of these Guidelines. Please note, components of the Guidelines may not be applicable to your development or operations. If you are unsure about the applicability of a specific section in the Guidelines, please contact the Port via planning@townsville-port.com.au.

These Guidelines apply to new developments or modifications/upgrades to existing developments, but they apply for the life of the development after approval. Developments need to comply with the Guidelines that were in force at the time of development approval. However, as part of reaching Port Vision 2050, existing developments will need to transition to these standards over time.

This document is regularly updated to ensure the Guidelines contain the most up-to-date information and requirements. The latest version of the Guidelines will be made available on Port's website with superseded versions archived, but available on request.

4. LEASE HOLDER APPROVALS FOR PERMANENT WORKS

Anyone undertaking any work on SPL will need between one and three approvals. These approvals are:

A. LAND TENURE: The first approval is land tenure. The proponent must be granted a form of land tenure before any development can be commenced. Land tenure may be in the form of a lease or sub-lease, or a permit or licence to occupy. Land tenure applies to both onshore and marine areas. Tenure dealings are managed by the Port's Property unit. Development and operational activities are limited to the uses permitted in the tenure agreement. The proponent remains wholly responsible for the design, construction and implementation of new developments, including any environmental monitoring and safety management. Any changes on the site must be discussed with the Port's property team and will result in an amended lease/sub-lease/permit, as required. Land tenure is obtained through the Port's Property unit via allpropertydevelopment@townsville-port.com.au

B. LAND OWNERS CONSENT: The next approval that may be needed is a Land Owners Consent (LOC). LOC is necessary for all work EXCEPT the self-assessable minor works detailed in section 7. For all work that is not exempt, the proponent must submit a LOC Request form to the Port. This form can be located on the Port's website. As the Port is the landowner for all SPL, consent must be obtained from the Port prior to any development on Port land or waters. This includes new development and modifications to existing developments, including storing new products not included in the original LOC.

C. DEVELOPMENT APPROVAL: The final approval(s) that may be needed is a Development Approval (DA). This is detailed further below. Please note that the minor works detailed in section 7 do not require a DA.

It is vitally important not to start work of any type before gaining the required approvals. The safety and environmental risks are extreme if excavation or clearing work is undertaken without the required approvals.

4.1. Types of Development Approvals (DA)

If the work you are doing is defined as self-assessable minor works in section 7 then a DA is not required. For all other work please refer to the relevant LUP to determine the relevant development approvals that are required.

Under the *Planning Act 2016 (Qld)* (Planning Act) development is defined as any of the following:

- carrying out building work
- carrying out plumbing or drainage work
- carrying out operational work
- reconfiguring a lot
- making a material change of use of premises.

The term 'development' may include but not be limited to, such matters as the establishment of a new use, construction of new buildings, increasing the extent of hardstand areas, changing the intensity or scale of an existing development, changing products, and/or permitting any activity that results in an increase in traffic volume.

The Port has the responsibilities of the 'Assessment Manager' under the Planning Act for developments on SPL at the Port of Lucinda and Townsville. The Port does not act as the 'Assessment Manager' for Plumbing and Drainage Works or Building Works applications. These applications are made to the relevant local Council.

The Port has a Statutory Planning Officer to process applications. The Statutory Planning Officer can also co-ordinate pre-lodgement meetings with the relevant Port personnel or functional areas involved in the assessment process, as well as any government agencies that may have a role in the approval process.

The scale and nature of the proposed development will determine the complexity and nature of the application required. The process outlined in this document does not replace requirements or individual responsibility to understand obligations under the Planning Act and associated legislation.

Port recommends that you consult with the Statutory Planning Officer (via planning@townsville-port.com.au) in the preliminary phase of the process to ensure that relevant issues are addressed in your application and that a clear understanding of the approval process is obtained. Depending on the complexity and nature of the development, you may need to engage specialist consultants to assist where technical details and specific licensing issues need to be addressed.

5. LEASE HOLDER APPROVALS FOR TEMPORARY WORKS

Unless a temporary facility has an exemption as a self-assessable minor works (section 7) then the works will require the same consideration as permanent works (section 4). That being, land tenure, LOC and DA requirements.

The standards in these Guidelines apply to temporary as well as permanent facilities, however a proponent may seek dispensation for a relaxation in some standards for short periods of use. For example, Section 9.3.3 of these Guidelines presents relaxed requirements for temporary buildings, such as for construction projects. The time that temporary facilities are allowed to remain in place will be specified in the tenure agreement/LOC and/or DA and this will be based on the purpose of the facilities and the time period requested. The following should be noted for temporary facilities:

- Structures must still comply with the Building Code of Australia and be constructed for cyclone conditions.
- Cyclone rated tie-downs are required if buildings are to remain on site during the cyclone season.

6. CONTRACTORS WORKING FOR PORT OR LEASE HOLDER

It is the responsibility of each Contractor that is undertaking work for the Port or for lease holders to ensure that they have the appropriate permits in place. If in doubt, then the Contractor should contact the Statutory Planning Officer via planning@townsville-port.com.au and request confirmation before undertaking any works (temporary or permanent) on Port land.

7. SELF-ASSESSABLE MINOR WORKS NOT REQUIRING LOC OR DA

If the 'Special Requirements' detailed in Table 1 are met, then the following types of minor works do not require an LOC or DA from the Port. These exemptions do not apply to any State approvals that may be required under State legislation.

Table 1: Minor works exemptions

REF	EXEMPTION	SPECIAL REQUIREMENTS
A	A time extension for a lease not involving any works, or a sub-lease where there is no material change of use of the site	REQUIREMENT 1: See below.
B	Spray Painting	REQUIREMENT 1: See below. REQUIREMENT 2: A Permit to carry out spray painting is required from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/ REQUIREMENT 3: Any spray painting must use encapsulation techniques to prevent spray becoming air-borne
C	Blasting	REQUIREMENT 1: See below. REQUIREMENT 2: A Permit to carry out blasting is required from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/ REQUIREMENT 3: Any blasting must use encapsulation techniques to prevent dust becoming air-borne
D	Replacement of equipment or structure "like" for "like", excluding buildings/structures	REQUIREMENT 1: See below. NOTE: Replacement of buildings/structures will require a new approval because of changing standards over time.
E	Fencing	REQUIREMENT 1: See below. REQUIREMENT 2: Fencing must follow the lease boundary. REQUIREMENT 3: Fence design and installation is consistent with the requirements in the Sustainable Port Guidelines. REQUIREMENT 4: An 'Excavation Permit' to carry out any excavation/trenching works is required from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/
F	Signage affixed to a building (not free standing) Less than 4.5m^2	REQUIREMENT 1: See below. REQUIREMENT 2: All signage is consistent with the requirements in the Sustainable Port Guidelines. REQUIREMENT 3: All signage must comply with the requirements in the *Building Act 1975*.
G	Environmental monitoring, such as sediment or water sampling, terrestrial geotechnical investigations and installation of monitoring bores	REQUIREMENT 1: See below. REQUIREMENT 2: All geotechnical investigations and installation of monitoring bores will require an excavation/trenching works permit from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/ REQUIREMENT 3: All environmental sampling in the harbour requires notification to the Port Duty Officer: dutyofficer@townsville-port.com.au

REF	EXEMPTION	SPECIAL REQUIREMENTS
H	Utilities/telecommunications connections within existing service corridors	REQUIREMENT 1: See below. REQUIREMENT 2: An 'Excavation Permit' to carry out any excavation/trenching works is required from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/
I	Minor Excavations less than 5 m^3 not involving disturbance to marine plants or vegetation	REQUIREMENT 1: See below. REQUIREMENT 2: An 'Excavation Permit' to carry out any excavation/trenching works is required from Port under Port Notices. https://www.townsville-port.com.au/operations/permits-forms/
J	Landscaping	REQUIREMENT 1: See below REQUIREMENT 2: Landscaping work must be consistent with requirements in the Sustainable Port Guidelines.
K	Buoy moorings	REQUIREMENT 1: See below REQUIREMENT 2: Buoy moorings are exempt from obtaining a Development Approval, however a letter of support from Port will be required to accompany an application to Maritime Safety Queensland for a buoy mooring authority. If it is proposed to site a mooring in a location where marine plants have historically been mapped, Port may request additional information to understand the impact and confirm any further approval requirements.

REQUIREMENT 1: Any activity undertaken must not cause environmental harm or nuisance and may require an Environmental Management Plan. Best industry practice is always expected for all activities.

Cultural heritage Section 23 of the *Aboriginal Cultural Heritage Act 2003* establishes a duty of care for all persons carrying out an activity to take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage. It is the responsibility of the person undertaking the activity to ensure compliance with the duty of care.

All works must comply fully with Commonwealth and State laws relating to safety.

8. APPLICATION

Once Land Tenure is granted then the following processes need to be followed depending on the need for an LOC and/or DA.

8.1. Land Owners Consent Application

For all work that is not exempt, the proponent must submit a LOC Request form to the Port. As the Port is the landowner for all SPL, consent must be obtained from the Port prior to any development on Port land or waters. This includes new development and modifications to existing developments, including storing new products not included in the original LOC for the development.

The proponent must submit a Land Owner Request form to the Port's Statutory Planning Officer via planning@townsville-port.com.au. This form can be located on the Port's website.

Generally, it takes approximately three to four weeks after Port's receipt of the application, if all the required information has been provided at the time of the application. Assessment time will be longer if an Information Request is required.

The LOC must be granted prior to submitting a Development Approval application and be attached as part of the supporting information.

8.2. Development Approval Consent Application

While the TIA establishes the jurisdiction for the Port to prepare the LUP for the Port of Lucinda, the process by which development on port land is approved is governed by the Planning Act. Under the Planning Act, the Port Authority is the assessment manager for development on its respective strategic port land.

Under the Planning Act development is defined as any of the following:

- carrying out building work
- carrying out plumbing or drainage work
- carrying out operational work
- reconfiguring a lot
- making a material change of use of premises.

Please refer to the relevant LUP to determine the relevant development approvals that are required for the type of development proposed, in the proposed land use precinct.

Certain developments may also require other approvals as identified in Schedule 10 of the *Planning Regulation 2017* and referral to the State government for assessment and approval. For Material Change of Use applications, Operational Works (i.e. Tidal Works, Marine Plants or Vegetation Removal), or projects involving referrable Environmentally Relevant Activities, the State Government's Development Assessment Rules (DA Rules) apply.

Forms and processes are provided on the Queensland Government website for the Department of State Development, Infrastructure, Local Government and Planning. A summary of the process is outlined in Figure 1.

Generally, it takes approximately, ten to sixteen weeks after a properly made application has been made, plus any additional time required for the proponent to respond to any Information Request issued (see Notes below).

Notes:
1. If the project involves an Environmental Impact Study (EIS), the EIS must be submitted before assessment of the project can commence. Approval times above do not include preparation of the EIS by the proponent.
2. Port does not guarantee approval times and the above are only typical approval times provided for project planning purposes. Applications with insufficient information provided will take longer to assess.

8.3. Building Works, Plumbing and Drainage

In addition to obtaining planning approval from Port, separate approvals for Building Works and/or Plumbing and Drainage Works may be required for the development.

An important aspect of the design process for the development will be compliance with the requirements of the Building Code of Australia and the Standard Building Regulation. You may engage the services of a private certifier to assess and approve Building Works. The Port cannot provide such approvals and does not offer these services.

You must use Townsville City Council or Hinchinbrook Shire Council for the Plumbing and Drainage Works application for Townsville or Lucinda Ports. The Port cannot provide such approvals and does not offer these services.

A copy of the Development Permit will then need to be supplied to the Port Statutory Planning officer by the proponent.

8.4. Other Licences and Approvals

Depending on the nature or location of your development, you may also require a range of other licenses and approvals, such as trade waste agreement, potable water or biosecurity approvals. These approvals can be discussed during pre-lodgement discussions with the Port.

8.5. Fees

The Port charges application fees according to the nature and scale of the application types. The fees applicable to the four application types are outlined in the Port's Other Charges Schedule (POT 2347) available on the Port's website. Application fees payable will be confirmed during the pre-lodgement stage, in consultation with Port's Planning Officer. Where Port requires the submission of technical reports to facilitate the assessment of a development application or condition of approval, additional fees may apply.

Please note that fees may also be payable to referral or concurrence agencies during the development assessment (e.g. assessment and approval of ERAs).

8.6. Supporting information

The application must provide supporting information on the proposed development. When preparing your development application, it is important that you tailor the application to the complexity of the development. To make it easier to determine what level of information you need to provide, Port has divided developments into four distinct application types as presented in Table 2.

Table 2: Classification of developments relating to their complexity

TYPE	COMPLEXITY	EXAMPLE	SUPPORTING INFORMATION
1	A development or activity not pertaining to assessable development under the LUP or the development can demonstrate it is accepted, subject to requirements under the LUP.	Development enquiry, addition to or alteration of the lease land, permits.	Supporting information on the development including demonstration of how it meets the specific requirements of the code as listed in the LUP.
2	Uncomplicated minor developments that do not have an Environmentally Relevant Activity (ERA) under the Environmental Protection Regulation 2019 and do not have any referral agencies.	Minor extensions to a building and development that involves minimal site disturbance.	Supporting information on the development including demonstration of how it meets the specific requirements of the code as listed in the LUP. Provide information on the site, layout, access, buildings and structures. An EMP may be required.
3	Relatively uncomplicated development that may involve one or more ERA's and require detailed planning and environmental assessment.	Major change to an existing development, new medium sized developments with construction and earthworks.	Detailed information required, as outlined below with detailed supporting investigations as relevant. Must address the relevant Planning Act requirements as well as Port requirements.
4	Complex applications that almost always involve ERAs and potentially other referral agencies. These applications generally require detailed analysis of environmental impact or risk assessment and may require development-specific modification of existing infrastructure.	Boat building premises, bulk storage facilities, chemical storage facilities, major developments with construction and earthworks.	Detailed information required, as outlined below with detailed supporting investigations as relevant. Usually Type 4 developments will require input from experienced specialist consultants in various technical areas. Must address the relevant Planning Act requirements as well as Port requirements.

Supporting information for developments at the Ports of Lucinda and Townsville, should include, but not be limited to:

a) Background to the project and proponent, including expected life of the development, products/equipment, personnel, economic impact.
b) Details of the tenure arrangements for the development.
c) Details of why the project needs to be located on Strategic Port Land (e.g. import/export schedules)
d) Details of the site location and land use precinct for the development and how the development meets the intent, specific outcomes and consistent land uses for the precinct.
e) Site layout plan indicating building layout and offsets to boundaries.
f) Details of the environmental values of the proposed site and adjacent environment.

g) Details of emissions from the proposed development and any environmental management measures.
h) Building (s) plan and elevation, including foundation details.
i) Proposed site access and traffic related to the project.
j) Site utility loading (water, wastewater and power).
k) How the proposed development meets the Port Development Code or Master Plan code in the relevant LUP.
l) How the proposed development meets the Sustainable Port Guideline.

Technical reports and investigations that may be required include, but are not limited to:

TECHNICAL REPORTS	
Site operations	Concept and site plans Product handling operations
Risk	Hazard and Risk Impact Assessment Hazard and Operability Study (HAZOP) Fire safety Emergency Response Plan Construction/Operational Workplace Health and Safety Plan
Engineering	Geotechnical conditions Lighting Assessment Roads and Traffic Modelling and Impacts Assessment Study Stormwater/Flood modelling and Assessment Report
Environmental	Environmental Assessment Acid Sulphate Soils Stormwater Quality Modelling Noise Modelling and Assessment Report Air Quality Modelling and Assessment Cultural Heritage Management Plan Light Pollution assessment Construction/Operational EMP

Appendix 1 provides guidance as to the items that would be expected to be included in these investigations.

Port has also developed a number of Whole of Port models to assist with Port development and planning. These models include a hydraulic model, air quality model and noise model. These models are available for proponents to use under agreement to the Port to assess the effect of the project with existing developments at the Port. A fee may also apply for the provision and use of these models.

8.6.1. Certification of Engineering Designs and Drawings

The *Queensland Professional Engineers Act 2002* prescribes that professional engineering services may only be provided by individuals registered as professional engineers. All engineering designs and drawings must be certified by a Registered Professional Engineer of Queensland (RPEQ) as safe, fit for purpose and that it meets relevant Australian Standards. All drawings submitted must clearly reference the engineering specifications used to develop the design. The specifications should include:

- Design life;
- Design loads and foundation requirements;
- Importance level;
- Vehicle dimensions and details;
- Vessel dimensions and details;
- Axle loads etc.

Design and As Constructed Drawings shall comply with the Corporation's 'Survey and Datums Guide POT428', for which a copy can be made available upon request.

The Drawings shall reference the horizontal and vertical datum used.

8.6.2. Supply of asset data

For any services or infrastructure that is directly connected to or linked to Port's services/infrastructure or where an asset is intended to be transferred to the Port, Port requires that Proponents supply relevant asset data, warranties, maintenance manuals and asset management plans. This may include 12D modelling data and asset-specific data for Port's asset information system.

8.6.3. Supply of spatial data to Port

The minimum standards for the supply of spatial data to the Port will include the following:

Vector Format: ESRI shapefiles (Point, Line or Polygon) Projection: MGA Zone 55, GDA2020 datum Metadata including: Creative Common licence; Custodian Contact Details; List of Attributes, Aliases and Full Description of attributes. Sample output in PDF format – with layer file if a particular colour scheme is recommended.	**Raster Imagery (inc Drone Imagery)** Format: GeoTiff, Georeferenced jpg Projection: WGS84 Metadata including: Creative Common licence; Custodian Contact Details. Sample output in PDF format – with layer file if a particular colour scheme is recommended.
GPS raw data Format: ESRI shapefile (Point) or CSV Projection: Decimal Degrees GDA2020 datum Metadata including: Creative Common licence; Custodian Contact Details; List of Attributes, Aliases and Full Description of attributes.	**CAD** **Format: DWG or DXF** Projection: MGA Zone 55, GDA2020 datum Metadata including: Creative Common licence; Custodian Contact Details; List of Attributes, Aliases and Full Description of attributes. Sample output in PDF format.

Further information regarding horizontal and vertical datums, together with survey requirements, is available from the Corporation's 'Survey and Datums Guide POT428' for which a copy can be made available upon request.

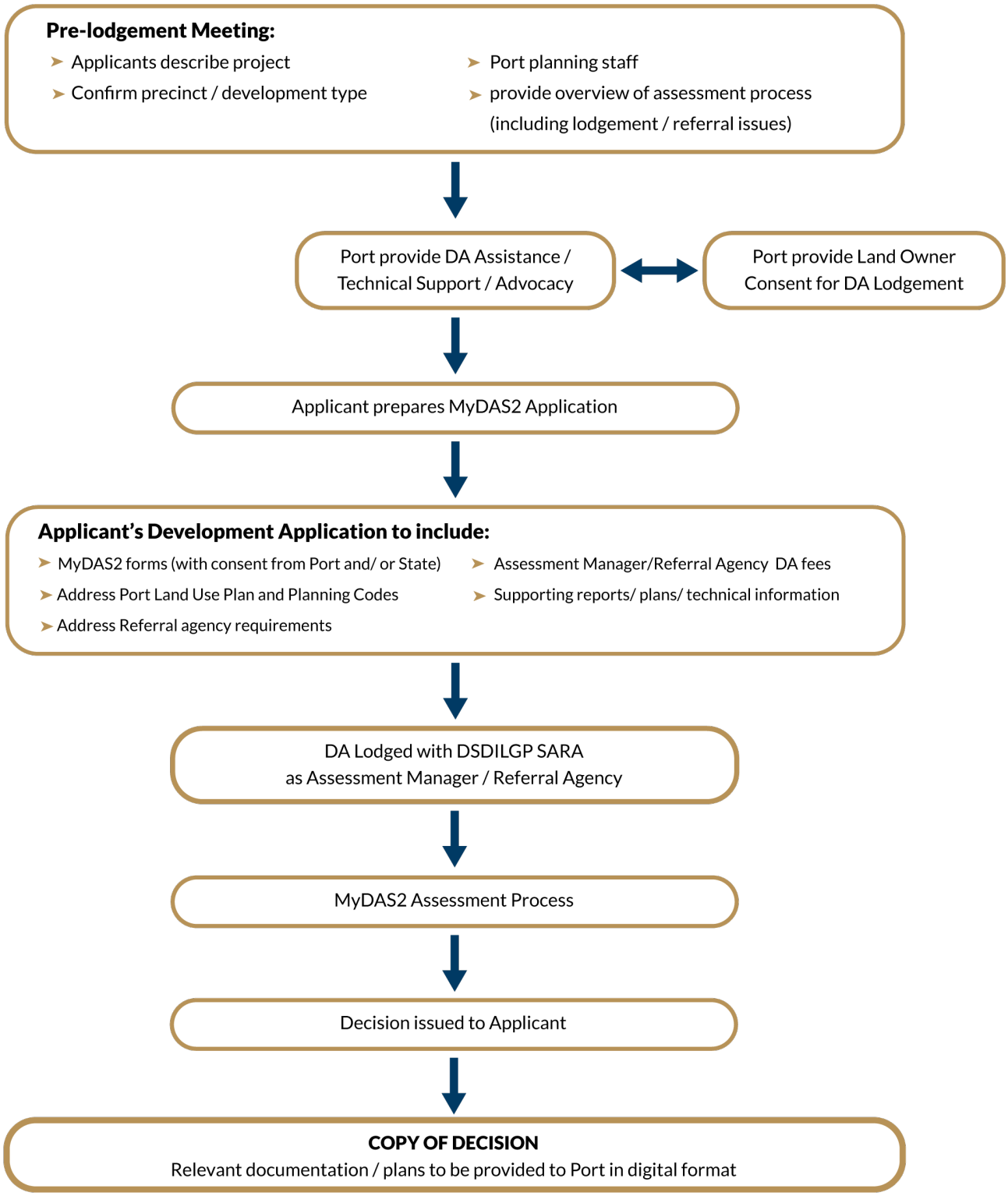
8.7. Lodgement

The Planning Officer can coordinate pre-lodgement meetings with relevant Port personnel or functional areas involved in the assessment process, as well as any government agencies that have a role in the approval process. The Planning Officer can review your application prior to lodgement and provide preliminary comments and further detailed guidance on content and issues covered. This preliminary review process is particularly useful to reduce the potential for further information requests and, therefore, minimise delays in the approval process.

Once finalised, the development approval application and supporting information should be directed to:

The Assessment Manager
Port of Townsville
PO Box 1031
TOWNSVILLE QLD 4810
planning@townsville-port.com.au

Figure 1 **DEVELOPMENT APPROVAL ASSESSMENT PROCESS**



9. BUILDING DESIGN, SITE LAYOUT AND ACCESS

9.1. Objectives

a) Developments must be designed to meet relevant Australian Standards and comply with the National Construction Code / Building Code of Australia.

b) Buildings and structures must, as a minimum, be designed with a constructed floor level that provides adequate flood immunity for the life of the project. This needs to take account of any storm surge or expected sea level rise expected in the life of the project.

c) The layout of a site must contribute to the efficiency and safety of the site, as well as supporting the strong visual presentation of the site.

d) Safe pedestrian access must be provided within the site.

e) Vehicles for staff, visitors or customers must park within the site. Vehicles must not queue outside the site.

f) Development must be appropriately setback from lease boundaries to ensure development does not pose a risk to third parties or facilities beyond the site boundary.

g) All new development should contribute to the visual amenity and character of the surrounding area. It should provide amenity to onsite employees and visitors.

h) Development is appropriate for the local marine and industrial environment.

9.2. Specific Requirements

9.2.1. Building Design Standards

All buildings must be designed and built to comply with the National Construction Code (NCC) / Building Code of Australia (BCA). Building fire safety standards and fighting equipment must comply with the BCA as the minimum standard, as well as including any additional requirements specified by Queensland Fire and Emergency Services.

Non- discriminatory access to new buildings and for additions or major alterations to existing buildings must be provided for in accordance with AS1428 – Design Access and Mobility.

The Proponent must ensure that all drawings submitted for approval clearly note the engineering specifications and calculations used to inform the design of the facility. All design drawings should be certified by a Registered Professional Engineer of Queensland (or equivalent). Building and plumbing and drainage must be certified by a private certifier and a copy of the certification and as constructed drawings provided to Port's Planning Officer at completion of the works.

9.2.2. Design life

Development on land and waters should have a design life that is fit for its intended use and/or correlates with the currency period of the relevant tenure agreement with the Port.

9.2.3. Geotechnical conditions

The majority of Townsville SPL has been reclaimed over time via dredging using various materials including sand, clay and silt. Development on Port land needs to be considerate of the existing geotechnical conditions (including settlements). The Proponent must ensure that the design and construction of infrastructure, utilities and services is considerate of the geotechnical conditions (including settlements) and the movement caused by the use of surrounding structures.

The Proponent shall undertake geotechnical investigations to inform development and design requirements, including potential settlements over the design life of any structures that would form part

of the proposed development. It is likely that ground improvement works will be required, and Proponents are advised to allow for this in potential development works and timelines. Design settlement targets and solutions should be included in the design reports provided for Port review (e.g. stormwater pipes are designed and installed to allow for settlement around manholes and adjacent to wharves to accommodate for movements of ship berthing).

The Proponent is encouraged to cut and level the site to minimise the need for importing fill material as far as practicable. All fill material must consider the advice of AS3798. The Proponent will ensure that carrying out of any excavation or filling does not create any land instability or personnel safety risk or reduce the utilisation of the adjoining land by its users. There are statutory requirements associated with importing and exporting fill material. The Port's Environmental Team can assist a Proponent to identify these requirements.

9.2.4. Wind conditions

All development at Townsville Port and Lucinda Port will be designed to accommodate wind speeds in Region C and Terrain Category 2 (as outlined in AS1170.2).

The Proponent will ensure:

- container cranes and ship loaders (also berths, wharfs) are designed to accommodate regional wind speeds not less than 78 m/s (ultimate wind speed for limit state design) based on an Importance Level of 4 and design life of 50 years;
- consideration for a lower level of importance (please refer to Table 3.2 as part of the AS/NZS 1170.0:2002 to determine the importance level for building types) may be considered where the proponent can demonstrate via a RPEQ risk based assessment the lower level is appropriate for their equipment and shall not be less than level 2;
- container cranes and ship loaders are capable of being operated in wind speeds not less than 20m/s (permissible wind speed for working stress design); and
- all other infrastructure and buildings are designed to accommodate regional wind speeds of not less than 70 m/s (ultimate wind speed for limit state design) based on an Importance Level of 2.

9.2.5. Buildings and Structures

Buildings are designed to endure local weather conditions. The Proponent is to design the buildings and structures to meet the relevant building standards for Townsville and Lucinda for wind, cyclones, earthquakes, storms and storm surge. All buildings and structures must be certified by a Registered Professional Engineer of Queensland.

Buildings are designed in regard to machinery and equipment safety. The Proponent must ensure that the design (including plant, machinery and equipment), built form and operations accord with *Work Health and Safety Act 2011* and AS4024. The Proponent will ensure that the building and any associated plant can be accessed safely for maintenance and repair work. The proponent is to ensure that all equipment can be easily and safely accessed through purpose-built access / inspection points.

9.2.6. Maximum Building Footprint

Except for vehicle crossovers and underground infrastructure connections, all development must be contained within the lease area. The building footprint (excluding driveways/parking) should not exceed 75 % of the total site area.

9.2.7. Building orientation

Offices must be sited and oriented towards the road frontage. The main entry to the building is to be easily identifiable from the street and directly accessible from parking areas through the front of the

building. The development should passively direct visitors to minimise the need for signage. The office facilities must include an outdoor staff recreation area.

9.2.8. Building Setbacks

Building and structure setbacks from roads are a minimum of:

i) 6 m from any road frontage lease boundary;
ii) 3 m from any secondary road frontage; and
iii) Setbacks from side or back boundaries not adjacent to a road are as listed in Table 3, noting that emergency service access around the building must be provided in the site layout.

Table 3: Building Setbacks

BUILDING HEIGHT	SETBACK FROM SIDE OR REAR LEASE BOUNDARY
To 7.5m	2.0 m
Greater than 7.5 m	2.0 m, plus 0.5 m for every 3m of height (or part thereof) above 7.5m

9.2.9. Structure Heights

No maximum building height is specified by the Port for either Townsville or Lucinda Ports, although building height should be similar to surrounding development and not result in significant loss of visual amenity.

Heights of permanent cranes, stackers/ reclaimers and other elevated structures of greater height are to be submitted to Port for approval as part of the approval process.

9.2.10. Appearance

All buildings must have a formal entry point. Buildings need to be designed to incorporate a mix of building forms, colours, materials and treatments into the façade. Buildings located in the publicly accessible Port precincts of the Port are expected to have a higher quality of presentation than in other zones of the Port. Port encourages proponents in this zone to be innovative in their building designs and to ensure an attractive building finish is provided.

9.2.11. Colours and Reflectivity

Buildings are to incorporate the following:

i) External materials are to have muted recessive colours with material and/ or tonal colour variation used to break up the mass of buildings and walls;
ii) Lighter shades are to be used for larger wall areas and darker shades used as highlights; and
iii) Liquid product tanks, such as fuel storage tanks, are to remain in their metallic form or be painted white or light yellow.

The presence of mobile equipment such as cranes, gantries, stacker reclaimers and shiploaders should be reinforced through colours, unless there is a specific need to minimise visual impact for community amenity.

Materials and colours for buildings and roofs are to minimise reflectivity.

Depending on the location of the site, proponents are encouraged to consider artworks on tanks or pipelines to create visual interest and amenity. All artwork designs are to be approved by Port.

9.2.12. Durability

Materials used must be appropriate for a marine and industrial environment. The Proponent is encouraged to use non-corrosive metals (i.e. marine grade aluminium, grade 316 or 316L stainless steel,

2205 duplex stainless steel etc.), hot-dipped galvanised or Colorbond products. Consider relevant advice outlined in AS2312 and AS4312.

9.2.13. Site and Floor Levels

Premises or structures subject to risk of inundation or damage through flood or storm surge and including all premises and land situated below 4 metres AHD are designed, constructed and maintained with appropriate flood and storm surge immunity to reduce potential property damage and to ensure public safety. Site levels, buildings and structures must be designed with a minimum level to provide immunity from flooding and storm surge, including sea level rise for the project life of the building. This applies both on land and for structures over water.

A flooding, storm tide and storm surge assessment should be carried out to determine the required site level using the following criteria:

i) 1 in 100 year ARI (Q100) terrestrial flood event;
ii) 1 in 20 year ARI of storm surge; and
iii) Sea level rise of 0.8 m over the next 100 years.

Buildings are located and designed so that floor levels are 500mm above the 1% AEP flood and storm event. For foreshore areas, allowance also needs to be allowed for wave run-up, which will be determined by the type of foreshore protection.

The Port has developed a Whole of Port hydraulic/flood model which can be used by Proponents for a fee to assess the contribution of the proposed activity/site development to the existing stormwater network at the Port. This can be discussed in pre-lodgement meetings with the Port's environmental specialists.

Development impacts are to be appropriately modelled utilising the Ports existing hydraulic model, or approved alternative model, to demonstrate no worsening flooding impacts from proposed development works.

9.2.14. Stormwater flow and site drainage

Stormwater should be managed to minimise the discharge of contaminants to receiving waters and minimize impact to people, property and infrastructure. No worsening of existing stormwater conditions external to the site is to be achieved for all new development. The Port's overland flow mapping should be considered when defining overland flow paths and stormwater discharge locations.

In the event of major weather events, the drainage system must be designed to handle storm surges or flooding by effectively draining the water run-off to an appropriate location. Drainage systems must comply with the Building Code of Australia and any relevant Australian Standard.

Development design should include consideration for flood free floor levels. The site should be designed to:

- Pipe stormwater during at least a 39% AEP storm event; and
- Direct overland flow to an appropriate location during a 1% AEP storm event should also be considered, whilst maintaining no worsening of existing flow behaviour in accordance with QUDM.

The major drainage network is to be designed to cater for 50% blockage in the minor drainage network without causing inundation of building floor levels, or worsening flooding or drainage impacts on upstream or downstream properties.

Discharge points are not to be located in areas that may adversely impact on areas of high ecological value. Please note, the Port must consent to the proposed stormwater discharge location(s). The minor

drainage network to the lawful point of discharge is to incorporate a tidal flap/tidal control/backflow prevention system appropriate to the drainage network and environment.

The site should be designed with a grade no steeper than 1 in 100 (a grade no steeper than 1 in 80 may be considered in special circumstances).

The Proponent must ensure that the site is graded no steeper than 1 in 80. The Proponent is encouraged to have a grade no steeper than 1 in 100.

The Proponent must ensure that stormwater pipes are designed and constructed to withstand the impacts of the marine environment and the local geotechnical conditions. For example:

- the Proponent should use rubber ring jointed pipes;
- the Proponent is encouraged to seal the lifting holes in the reinforced concrete pipes. The lifting holes should be sealed with a geofabric patch (approximately 300mm square) prior to backfilling;
- the Proponent is not permitted to use flush jointed pipes as they are unlikely to cope with the ground settlement at the Port.

To ensure pipes are self-flushing during storm events, the Proponent must ensure that the gradient of the stormwater pipes are no less than 1 in 500. The Proponent is encouraged to install stormwater pipes with a gradient of 1 in 250 or more.

Hardstand surfaces should drain to permeable ones to reduce stormwater run-off by promoting infiltration. Consider the incorporation of swales into a site stormwater design to direct water either from the site and to devices such as pollutant traps, settling ponds or retention basins to support groundwater recharge.

The design of buildings and site improvements should respect the natural water flows of the site to minimize excavation and earth moving (i.e. disturbances) in the construction process. Consider the natural, existing environment and retain natural watercourses and drainage channels where possible, as well as any significant native vegetation that may already exist in these areas. Swales may be lined with rock or gravel and planted. All materials used should be from sustainable sources where practicable. Where the water flow is not continuous and the swale is in a large, grassed area, a swale could also be turfed as an alternative.

Stormwater Management Plan (SMP)
Where deemed to be a requirement for development by the Port, a SMP should be prepared by a suitably qualified RPEQ engineer and should demonstrate that the required stormwater quantity and quality objectives have been achieved. The SMP should comply with advice provided in this document, as well as the requirements outlined in QUDM and SPP. The SMP should illustrate the site's capacity to effectively manage stormwater, define the stormwater catchment area, the direction of stormwater runoff and include a design that demonstrates that no worsening of existing (i.e. pre-development) flow behavior is achieved in accordance with QUDM as well as achievement of the water quality objectives.

Stormwater quality and stormwater management requirements are further outlined in section 20.2.7.

9.2.15. Site Access

Access to industrial development shall be designed and constructed with safe ingress and egress of vehicles to the site without queuing outside the site. The design of vehicle access, circulation, manoeuvring and parking areas demonstrates compliance with relevant Australian Standards, relevant State policy or other adopted by the Port.

Access to industrial sites is required as follows:

(i) a vehicle access point is at least 10 metres to an intersecting street when the driveway is on the same side of the street; and

(ii) a minimum sight distance of 110 metres is provided in either direction to an access point.

Proponents can prepare relevant risk assessments and supporting information and seek Port's approval for an alternative arrangement demonstrating safe movements.

Site access shall be provided through a single sealed driveway and footpath cross-over. The cross- over shall be constructed in accordance with local council standards for a commercial / industrial site. If a separate entry and exit driveway are proposed, this will require specific approval from Port. Any new cross-over on to Council or State- controlled Roads also requires approval from the relevant Authority.

Cross-overs must match the level of an existing footpath, or the adjacent footpath may be reconstructed to match the level of the cross-over. There must be no trip hazards caused by the cross-over and footpath.

Internal driveways and roads must have sufficient width to adequately cater for the nature of the traffic envisaged and internal safe movements must be demonstrated in the supporting information.

The driveway must also have an inlet grate at the top to assist in preventing material and water leaving the site down the driveway. IPWEAQ standard drawings recommends as a minimum Class B is adopted for inlet design.

9.2.16. Site Traffic Management

Any new developments will have due regard for traffic impacts on the local area and will seek to minimise any impacts. All operational vehicle movements, including circulation, manoeuvring, queuing, loading and unloading goods, delivery and pick-up, and service vehicles (such as rubbish collection) must be accommodated within the lease area.

All circulation and parking areas allow for the safe manoeuvring of all vehicles according to AUSTROADS or other standard vehicle manoeuvring template confirmed by the Port.

As part of the supporting information, the Proponent must provide a Roads and Traffic Impacts Assessment report addressing the following items:

i) quantifying transport operations given the existing configuration of port roads, intersections, security gates, rail spurs and level crossings;

ii) details about expected vehicle visitation to the site (i.e. details of maximum number of vehicles that will visit the site on a daily basis at the busiest/peak times as well as maximum annual number of vehicle movements for each vehicle type should be provided);

iii) the expected routes to be utilised for each component of freight / trucking operations;

iv) details about operating hours and the expected maximum number and frequency of vehicle movements for each vehicle type during every hour of a 24 hour day for each route to be utilised;

v) the expected maximum annual number of vehicle movements for each vehicle type for each route to be utilised;

vi) vehicle type details including axle loading;

vii) the expected axle loadings and annual repetitions on proposed port internal routes;

viii) process for organising and marshalling vehicles on site;

ix) time taken to facilitate vehicle entry, processing and exit to/from site;

x) details about traffic management infrastructure, vehicle booking systems and on-site traffic management that will accommodate the maximum number of vehicles that will be visiting the site at the busiest time;
xi) swept paths for each vehicle type on each intersection, facility entry /exit to be utilised and route/s to be used (including consideration of potential limiting horizontal road geometries along the routes);
xii) traffic modelling to confirm that the traffic generated by the site will not adversely impact the safe and efficient operation of the Port or the surrounding road network or increase the maintenance of the road network.
xiii) confirmation that the operation will not necessitate vehicle queuing or parking outside the Proponent's leased area;
xiv) Traffic management along the internal port routes with consideration of 2-way traffic interaction with other port users; and
xv) any other information considered suitable or required to detail impacts and demands on road network and rail network.

A traffic management plan is to be provided to Port prior to works commencing which outlines the following:

- details about expected vehicle visitation to the site (i.e. details of maximum number of vehicles that will visit the site on a daily basis at the busiest/peak times as well as maximum annual number of vehicle movements for each vehicle type should be provided);
- the expected routes to be utilised for each component of freight / trucking operations;
- details about operating hours and the expected maximum number and frequency of vehicle movements for each vehicle type during every hour of a 24-hour day for each route to be utilised;
- the expected maximum annual number of vehicle movements for each vehicle type for each route to be utilised;
- vehicle type details including axle loading;
- process for organising and marshalling vehicles on site;
- time taken to facilitate vehicle entry, processing and exit to/from site;
- details about traffic management infrastructure, vehicle booking systems and on-site traffic management that will accommodate the maximum number of vehicles that will be visiting the site at the busiest time;
- dimensions of all pavements and areas;
- depths of, and materials used to construct pavements;
- turning templates for largest turning circle of vehicles accessing the site;
- all gradients of parking, access and circulation areas;
- access for service vehicles;
- sight lines;
- height clearances;
- driver training and inductions;
- vehicle maintenance, re-fuelling operations and servicing; and
- Incident and Emergency Response.

9.2.17. Vehicle Parking

All circulation and parking areas allow for the safe manoeuvring of all vehicles according to AUSTROADS or other standard acceptable to the Port. Internal circulation roads do not

conflict with parking areas. Parking and manoeuvring areas within a site shall be designed such that all vehicles can enter and leave in a forward gear.

Vehicle parking on-site must be contained within the lease area. Vehicle parking must be segregated from areas dedicated to loading and unloading goods and any waste storage area. Visitor parking must be located at the front of the site and provide easy access to the main entry.

Parking provided shall comply with requirements in the NCC Building Code of Australia for provision of car spaces and signage for people with disabilities. All vehicle parking on-site shall be sealed (bitumen or concrete), line-marked, signed and drained in accordance with the latest edition of AS2890 series for off-street parking. The minimum car park bay dimensions are 2.5 m wide by 5.4 m long. The minimum number of parking spaces provided shall comply with Table 4.

Table 4: Number of parking spaces required for new developments

DEVELOPMENT TYPE	MINIMUM NUMBER OF PARKING SPACES
Office	Whichever is greater of: 1 space per employee; or 1 space per 30m^2 of Gross Floor Area (GFA)
Warehousing	Whichever is greater of: 1 space per employee at the time of peak period (i.e. two overlapping shifts); or 1 space per 100m^2 of Gross Floor Area (GFA)
Industry	Whichever is greater of: 1 space per employee at the time of peak period (i.e. two overlapping shifts); or 1 space per 100m^2 of Gross Floor Area (GFA) where the development site is less than 5000m^2
Commercial and Other Uses	Proponents shall determine the maximum number of vehicle spaces required and submit this to Port for consideration/approval
Motorcycles	Two per cent of the number of vehicle parking spaces required are provided as marked and signed areas for motorcycles, with a minimum of 1 space.
Bicycles	Provide and maintain dedicated facilities for the parking of push bikes suitable for securing a bike in an upright position within 30 m walking distance of a pedestrian entry to the building.
Disabled parking	Equitable parking access for vehicle occupants with disabilities is to be provided at a rate of 1 space per 100 ordinary parking spaces.

Temporary parking for construction or development-related vehicles, such as earth moving equipment, must be located away from the front of the building and regular parking area.

9.2.18. Pedestrian and Public Safety

Active work areas must be physically segregated from publicly or easily accessible areas. Access for pedestrians and persons with a disability must be arranged so that access to parking areas, work places, outdoor recreation areas and the office entry is provided without interacting with heavy or high speed vehicles, or busy traffic paths on site.

Where pedestrian routes meet vehicle routes, the following are to apply:

i) There must be adequate sight lines for the driver of the vehicle to see the pedestrian;
ii) Routes are to be clearly delineated with line markings, signage and barriers;
iii) Speed control devices are to be used to control vehicle speed; and
iv) Signage is to be used to warn and control vehicles and pedestrians.

9.2.19. Equipment Laydown Storage Areas

Equipment laydown or storage areas must be sealed with bitumen or concrete unless they are being used for temporary purposes, or Port has approved deferment or phased implementation of the sealing of the area.

9.2.20. Shipping Containers

Shipping containers are discouraged for use as recreation or as a workspace on either a temporary or permanent basis. However, it is permissible to use a container for storage of equipment provided that the container is fit for purpose, does not block access roads/pathways or detract from visual amenity of the site and can be secured in the event of a cyclone.

For container storage or hire facilities, container stacking heights must be risk assessed considering the impact of local wind conditions on the stacked containers, the status of the containers (i.e. empty or full) and the foundation on which the containers are stacked (i.e. sealed or unsealed land). The risk assessment must be provided to the Port as part of the approval process.

9.2.21. Buffer Zones

If higher risk activities that could impact on neighbouring land users are to be undertaken, or if environmental emissions (dust, odours, noise etc.) could occur from the site in normal or abnormal conditions, the site layout must include a buffer zone around the site. This buffer zone must provide sufficient separation distance to ensure the adjoining land uses or the public are not adversely affected. The proponent shall propose appropriate buffer zones within their leased site in their development application and include sufficient detail on the basis for this recommendation to allow an assessment by Port.

9.2.22. Landscaping

The site layout shall include landscaping as detailed in Section 17. The landscaping is to be used to screen the development from the road frontage and neighbouring sensitive areas, as well as to enhance the visual amenity of the site.

9.3. Use of Demountables

Permanent buildings rather than demountables are recommended for new developments on Port land. However, Port recognises that this may not be economically practical in some circumstances. Port will accordingly consider requests from Proponents for use of demountables on their merits.

Demountables are allowed to be used for offices and services (toilets, gatehouses etc.) during the construction of new developments or as interim facilities until permanent facilities are built.

9.3.1. Standards for Demountables

Where the use of a demountable building has been approved by Port, the following requirements must be met;

i) The building must meet the National Construction Code / Building Code of Australia;
ii) The building must be tied down to meet the severity of cyclones expected in the area;
iii) The building must be in very good condition and maintained as such throughout its use on Port land;
iv) Due to the marine environment where the buildings will be located, the manufacturer of the materials should be consulted to warrant the longevity of the materials for that environment.
v) Roof material, facia and downpipes, windows and door frames must be complementary in material and colour to the rest of the building.

vi) The buildings are to be air-conditioned with an energy-efficient system.
vii) All air conditioning, services and utility conduits are to be concealed.
viii) Landscaping is to be provided around the building to meet the landscaping requirements of these Guidelines. Consideration should be given to provision of an outdoor staff recreation area adjoining the building, including tables and chairs.

9.4. Site Decommissioning

On vacating a site, the Proponent will be required to perform certain functions to ensure the land is able to be used for strategic port land use purposes and to minimise the potential for environmental harm from the vacant site. Port personnel will conduct an exit inspection prior to the close out of the tenure arrangements.

Items to be discussed with Port, as part of the exit process in vacating the site include but are not limited to:

- Whether structures including hardstand are to be retained or removed from site.
- Whether all existing services are to be retained or removed from site and capped at the site boundary.
- Provision of site photos and a marked-up service locality plan with coordinates.
- Preparation of an exit land contamination assessment by a Suitably Qualified Person (see section 20.2.9) including undertaking any required remediation of land/groundwater and any measures or monitoring to be put in place post site decommissioning.
- All compacted areas to be ripped to improve soil quality and any bare soil area to be treated with hydro seeding or similar as approved by Port.

10. INFRASTRUCTURE AND SERVICES

10.1. Objectives

a) Infrastructure and services must be designed to meet relevant Australian Standards and comply with the National Construction Code / Building Code of Australia.
b) All sites are to have access to services such as power, lighting, potable water, waste disposal and telecommunications.
c) All infrastructure and services are to be designed by the Proponent to accommodate future planned development on the site.
d) Development is appropriate for the local marine and industrial environment.

10.2. Specific Requirements

10.2.1. General Requirements

Access to infrastructure, utilities and services must be safe and efficient. The design and operation of all infrastructure, utilities and services do not compromise planned future land uses and infrastructure, and include:

- appropriate alignments on and off site;
- appropriate locations on and off site;
- appropriate discharge and/or connection points;
- sufficient 'additional' design capacity; and
- conduits to enable the future provision of fibre-optic cabling and other 'smart-wiring'.

Services must be designed for easy maintenance and avoid areas of high environmental values.

Where it is proposed to build over existing utilities, specific planning approval from Port is required.

10.2.2. Asset Management

The Proponent must ensure that any infrastructure and/or service that joins onto/into/links to existing Port assets consider existing Port asset management and maintenance requirements. Services, infrastructure or building works that would/could eventually transfer to the Port will require asset management plans and maintenance schedules and requirements, developed to the level of detail of existing Port plans. Proponents will engage with the appropriate Port officers to achieve alignment and formal agreement on the format and outcomes of any such plans that are to be developed by the Proponent.

10.2.3. Location of services

Infrastructure, utilities and services within the site are to be aligned in a structured and orderly manner. All service connections are to be perpendicular to roads/ site frontage where practicable and enter as directly as possible. For clarification about the most appropriate alignment, please contact the Port's Infrastructure team.

Building services and infrastructure (e.g. mechanical plant, air conditioning units, water tanks, telecommunications etc.) are to be appropriately located out of view from the public and/or screened/designed to blend in with or complement the building or structure.

For air-conditioning units proposed on rooflines especially buildings of two-storeys or more, the proponent must consider alternative locations due to the potential for noise from these units to be generated and travel to sensitive receptors.

10.2.4. Access to infrastructure, utilities and services

The Proponent is to ensure that all infrastructure, utilities and services can be easily and safely accessed through purpose-built access / inspection points, at a maximum spacing of 100m and where there is a substantial change of direction of conduits. All access covers must comply with AS3996 and be marked with service details.

The Proponent is required to provide detectable marker warning tape 300mm above all services (including electrical and communications conduits, PVC pipes etc).

The Proponent must ensure that the conduit penetrations are at least 150mm above the floor to the electrical and communication pits and pulling eyes and nylon draw ropes are integrated into the design.

10.2.5. Pavement and concrete slabs on land

The Proponent will ensure pavement areas and concrete slabs are fit for its intended purpose and design life and accords with all relevant AS. Minimum specifications for development types at a maritime port are provided below. For discussion about the most appropriate specifications for the project, please contact the Port's Infrastructure team.

Table 5: Minimum Specifications for pavements and concrete grade on land

DEVELOPMENT	MINIMUM SPECIFICATIONS
Container Terminal	All pavements provided for container terminals will accommodate a minimum 50kPa, 120t axle load from reachstackers and forklifts and 15t straddle wheel load from an eight wheel straddle. Minimum concrete grade of N40.
General Cargo Terminal	All pavements provided for general cargo terminals will accommodate a minimum 40kPa, 110t axle load from reachstackers and forklifts and 13t straddle wheel load from an eight wheel straddle. Minimum concrete grade of N40.
Empty Container Parks	All pavements provided for all empty container parks will accommodate a minimum 15kPa, 60t axle load from reachstackers and forklifts and 11t straddle wheel load from an eight wheel straddle. Minimum concrete grade of N32.
Car Storage Facilities	All pavements for car storage facilities will accommodate a minimum 5kPa and 3t axle load. Minimum concrete grade of N32.
Warehouse	All pavements for warehouses will accommodate a minimum 20kPa, 60t axle load from reachstackers and forklifts and 11t straddle wheel load from an eight wheel straddle. Minimum concrete grade of N32

The RPEQ (or equivalent) is responsible for designing the pavement and/or concrete slabs for their intended use. All ground level pavements, slabs and hardstand areas must be certified by a Registered Professional Engineer of Queensland to withstand proposed loadings of buildings, vehicles, structures and container stacking where applicable. A design report shall be provided with details on design assumptions, design methods used and design calculations.

10.2.6. Roads

Roadworks, including car parking areas, shall comply with Queensland Main Roads specifications, unless Port expressly approves an alternative specification.

The RPEQ (or equivalent) is responsible for designing the pavement and/or concrete slabs for their intended use. The Proponent is required to provide a design basis report for the pavement design. The design basis report must outline the design vehicles, axle loads, number of repetitions, ESAs etc. adopted for the design.

10.2.7. Kerb and Channelling

If not already provided, each site is to have a concrete kerb and channel constructed at the Proponent's cost for the full frontage of any road. Where a new cross-over is installed for a development, kerb and channelling must be tied into the new cross-over.

10.2.8. Potable Water Services

The Port is registered as a service provider under the *Water Supply (Safety and Reliability) Act 2008*. The Port receives drinking water directly from the Townsville City Council (TCC) water infrastructure and therefore is only responsible for the transmission of drinking water once it is delivered to the Port infrastructure. TCC is the responsible entity for the delivery of safe and reliable drinking water to the Port network.

Port has a Drinking Water Quality Management Plan (POT 1828) in place and is available to all tenants. Annual reports of drinking water monitoring at the Port are also available on Port's website.

The Port is committed to providing access to safe and reliable water services to Port tenants, employees, operators within the Port and visiting vessels where applicable. The Port's Customer Service Standard (CSS) for Drinking Water (POT1809) ensures customers without a direct service contract with TCC are covered by standards in relation to the supply of drinking water. The CSS sets target levels of service for a number of performance indicators and outlines details of the services being provided with obligations on the Port and customers in relation to provision of drinking water services. The CSS outlines the process for establishing new services, billing, metering, customer consultation, lodging complaints and dispute resolution. A copy of the CSS is available on request from the Port's property unit.

During construction, water supply is not to be gained from fire main connections (within this or any other site) without the installation of an appropriate temporary or permanent metered standpipe, at a point approved by the Port. If a standpipe is required, Port will assess this requirement as part of the application process.

As-constructed service plans will be provided to the Port upon completion.

To minimise the use of potable water, Proponents are encouraged to investigate the use of rainwater harvesting for application on site for irrigation, toilets and industrial cleaning use.

10.2.9. Trade Waste and Sewerage Services

Townsville City Council (TCC) has issued a Trade Waste Agreement (TWA14/0031) for the Port of Townsville for 4 years (expiring 23 December 2024). Please note that this TWA covers the whole Port and is issued to the Port of Townsville Limited. As such the Port is responsible for all trade waste discharged from the Port and all tenants must comply with the trade waste approval conditions. A copy of the TWA can be provided on request from the Port's property team.

Proponents that wish to utilize the trade waste system for discharges from their site, other than pedestals/kitchens etc, must discuss the proposal with both Port and TCC Trade Waste personnel. The Proponent must advise of any pre-treatment devices and how the trade waste would meet the TWA acceptance criteria.

10.2.10. Solid Waste Services

Each leased property must arrange at least a weekly solid waste collection service for their leased site, which will include a separate service for recyclables. All waste must be stored in lidded containers to minimize windblown litter and access by vermin.

Ship waste (quarantine waste) is managed differently to meet biosecurity requirements and requests for ship disposal must go direct to the Port's operations team via the Duty Officer.

10.2.11. Power and Telecommunication Services

Each site must have connection to power and telecommunications, arranged by the Proponent and at the Proponent's cost. The Proponent must ensure that all electrical and telecommunications infrastructure is suitable for marine and industrial environments and complies with relevant Australian Standards. The Proponent is encouraged to incorporate drainage into electrical and communication pits (particularly in marine terminals).

For telecommunications cabling, where possible the size of conduits within road reserves or service corridors should be large enough for future needs and allow Port to utilize the same conduit if required.

The Proponent must ensure that all electrical conduits are installed by a qualified and competent contractor.

10.2.12. Fire Fighting Services

Developments shall comply with building fire safety requirements of the NCC Building Code of Australia, as well as any requirements of Queensland Fire and Emergency Services. Proponents should also refer to the design standards of Townsville City Council including the referenced CTM (Cairns-Townsville-Mackay) Water Alliance Design and Construction Code.

Proponents are responsible for provision of firefighting capability for their development. The Proponent is responsible for the provision of appropriate fire hydrants, fire exits, fire alarms, fire sprinkler systems, fire hoses, Portable fire extinguishers and other relevant firefighting infrastructure. Proponents shall ensure staff are trained in emergency response and evacuation procedures. A muster or assembly area must be clearly designated and emergency signs showing building exits must be in place. A drawing will be prepared by a suitably qualified professional that illustrates emergency response infrastructure.

Where existing mains pressure does not meet specific site fire water requirements, the proponent is responsible for the installation of any fire water storage or booster pump/s required on the site to meet Queensland Fire and Emergency Services (QFES) requirements. Proponents for new developments are encouraged to check water supply rates and pressures available at the site early in the design of the facility. Additional fire suppression systems may be required by Port where a fire in the premises may pose a significant risk to Port or adjacent land uses.

In accordance with the Department of Environment and Science (DES) Operational Policy for PFAS, foam extinguishers are to be fluorine free. Proponents who utilise C6 purity fire systems must provide supporting information to Port that the arrangement meets the DES Operational Policy.

Fire Safety must be appropriate to the business undertaking and the products being handled. If the business identifies that it would like to handle a new product, the fire aspects of the specific product must be risk assessed and the assessment provided to the Port. Handling of new products requires a new Land Owners Consent from the Port to consider fire risk to adjacent land uses.

10.3. Next Level Guidance

10.3.1. Low carbon cement or cement blends

Where appropriate and fit for purpose, Port encourages proponents to use low carbon cement products or geopolymer concrete products, or blended cements in developments.

Consideration should be given to using low carbon products or concrete blends which utilize waste streams (such as slag/fly ash/recycled plastic) to reduce the environmental footprint of the concrete and support a circular economy.

11. MARINE INFRASTUCTURE AND TIDAL WORKS

11.1. Objectives

a) Works are to be undertaken in compliance with all legislative requirements;
b) Proposed works are not to affect or impede current or future Port operations;
c) Works are to be designed for potential climate change impacts;
d) Marine structures, including pavement areas and concrete, must be designed and constructed to achieve the intended life of the structure;
e) Works are to be undertaken to minimise potential environmental impacts and protect environmental values of the marine environment; and
f) Marine infrastructure is to be safe for its users and the public.

11.2. Specific Requirements

11.2.1. Legislative Compliance

Approvals required under both State and Commonwealth legislation must be obtained by the Proponent for all tidal works, in addition to approvals required from Port. Drawings submitted must be "For Construction" drawings that have been signed by an RPEQ as:

i) Complying with all relevant Australian Standards; and
ii) That the structure is safe and structurally sound for the intended use.

Information on the following must be provided as a minimum, but not limited to:

i) Land tenure for the infrastructure and any connections to the land (from both Port as landholder and Department of Resources for water leases);
ii) Details of all services to be provided, including electrical, water, waste collection, safety equipment to be provided (access ladders, life rings, person overboard alarms and recovery systems), fire hydrants and hose reels, spill equipment and personnel meal rooms etc.
iii) Corrosion protection systems;
iv) Lighting (safety, security etc);
v) Navigational aids/ warning signs (lighting, buoys, markers, signs);
vi) Anchorage systems for floating plant during construction;
vii) Berthing or mooring arrangements for all vessels;
viii) Cyclone mooring provisions; and
ix) Details of any refuelling or reprovisioning proposed;
x) Details of any environmental emissions and controls for the proposed work;
xi) Details of any potential or actual Acid sulphate soil disturbance; and
xii) Details of any proposed damage, disturbance or removal of marine plants in the proposed work footprint.

Regulatory agencies may also require other information in addition to the above.

11.2.2. Design

The design life of infrastructure (including piles) and buildings is economical, durable for a marine environment, fit for its intended use (considering local weather conditions and vessels/equipment that will use the infrastructure) and accords with all relevant Australian Standards. All infrastructure and buildings must be certified by a Registered Professional Engineer of Queensland. A design report shall be provided with details on design assumptions, design methods used and design calculations.

Major maritime facilities (i.e. wharves) should have a design life of 50 years or more. Minor maritime facilities (i.e. recreational boating facilities such as pontoons, boat ramps etc.) should have a design life of 25 years or more. The Proponent will ensure that the building and any associated plant can be accessed safely for maintenance and repair work throughout the life of the infrastructure. The proponent is to ensure that all equipment can be easily and safely accessed through purpose-built access / inspection points.

The Proponent must ensure that the design of maritime structures complies with AS4997:2005 - Guidelines for the Design of Maritime Structures.

The Proponent must ensure that the design of marinas and pontoons complies with AS3962:2001 – Guidelines for the Design of Marinas. The Proponent must ensure that the design of recreational boating infrastructure also meets with DTMR's requirements.

For structures or facilities not covered by AS 4997 or AS3962, appropriate design standards should be used and referenced in the design documentation as well as in official certification of the works. For situations where codes, standards and guidelines are insufficient to guide the design, Port may require the Proponent to undertake physical modelling to provide reliable data for the design. All designs will be discussed and agreed on by the Port.

Fendering must be fit for purpose, considering local conditions and vessels that will utilize the wharves and consider PIANC - Guidelines for the Design of Fendering Systems: 2002.

Wharves

The Proponent will ensure wharves are designed in accordance with the minimum specifications below. All vehicle loads must include dynamic effects. Proponents are encouraged to design to the values indicated in parenthesis in the table. All vehicle loads must include dynamic effects.

Table 6: Minimum specifications for wharf designs for different vessels/cargoes

Wharf type	Load class	Design Load Bridge Design Code AS5100:2004	Certified for use		Vessel	Berthing Speed
			Reachstacker/ Forklift axle loads	Straddle wheel for 8-wheel straddle/MAFI		
General Cargo	40 (50)	SM100,HLP320 (SML1600, HLP400)	40kPa, 110t (50kPa, 120t)	15t	50,000 DWT (60,000DWT)	0.15m/s
Car	40 (50)	SM100,HLP400	40kPa, 110t (50kPa, 120t)	13t (15t)	35,000DWT (45,000DWT)	0.15m/s
Bulk	15 (25)	SM100 HLP400	15kPa, 60t (30kPa, 90t)		50,000DWT Handimax (60,000DWT Panamax)	0.15m/s
Container	50	SM100 HLP400	50kPa, 120t (60kPa, 120t)	15t	70,000DWT (100,000DWT)	0.15m/s
Cruise	15 (30)	SM100 HLP400	15kPa, 30t (30kPa, 45t)		140,000GRT	0.15m/s

Please note, the design vessels may be larger and the berthing speeds may be higher (depending on berthing conditions). The RPEQ (or equivalent) is responsible for designing the wharf for its intended use.

Piles

The Proponent is encouraged to use steel piles for marine structures. Appropriate consideration must be given to corrosion allowance in accordance with AS4997:2005.

The Proponent must confirm the details of the steel pile painting system or wrapping system (i.e. petrolatum-tape). The steel pile painting system or wrapping system must be appropriate for a marine environment (splash, spray and submerged zones) and demonstrate compliance with AS2312 and AS4312.

The Proponent is encouraged to provide a cathodic protection system (in accordance with AS2832) within the Portion of piles permanently immersed in water and a wrapping system (i.e. petrolatum-tape) for the Portion of the piles that are not permanently immersed in water.

Container cranes

Container cranes are fit for their intended purpose/design life and accord with all relevant AS.

The Proponent must ensure wharves are designed to accommodate the design wheel loads for container cranes in the storm (tie-down) conditions and wind standards as described in Section 9.2.4.

Navigation Markers

Navigation markers are to be designed and built to relevant Australian Standards, International Association of Lighthouse Authorities guidelines, and in accordance with any requirements set by Port and MSQ.

Moorings

Moorings are to be laid and maintained to an appropriate standard for the anticipated use. Moorings require approval from the Regional Harbour Master, as well as a letter of support from Port.

Anchorages

Anchorages may only be located in seabed areas where the anchoring of vessels will not impact on any environmentally sensitive area. The location must have an underwater survey of the area provided to Port as part of the development application process. Anchorages must not impede Port activities and are to be determined in consultation with Port and the Regional Harbour Master.

11.2.3. Design for Climate Change

The design of any new marine infrastructure must address potential sea level rise over the life of the project, as well as storm surge from increased cyclone intensity over that period. The standard sea level rise is taken as a minimum of 0.8 m rise over the next 100 years. The application for tidal works must provide sufficient detail of this assessment by the Proponent.

11.2.4. Concreting standards for development over water

The concrete work associated with the construction of a maritime facility is fit for its intended purpose and design life and accords with all relevant AS, including AS4997:2005- Guidelines for the Design of Maritime Structures for concrete cover.

The Proponent is required to confirm that all concreting will incorporate carbon steel reinforcement complying with AS4671.

Epoxy coating or other enveloping protection systems for reinforcement is not permitted.

Prestressed or post-stressed concrete is not recommended for marine structures. If prestressed or post-stressed concrete is proposed, special consideration and detailing is required for Port's consideration.

11.2.5. Vessel Simulations and Modelling

The Proponent must demonstrate to the satisfaction of Port and the Regional Harbour Master that the proposed configuration of maritime structures provides for adequate navigation and vessel manoeuvring clearances. Port may require the Proponent to carry out vessel simulations and / or modelling and the like of maritime structures and may require a representative of Port to be present during the undertaking of such studies or tests. The costs of attendance, including travel and accommodation, will be at the Proponent's cost.

11.2.6. Vehicle Access

If vehicles are to access a new marine infrastructure, the infrastructure is to provide adequate room for vehicle manoeuvring. A parking plan and traffic management plan is to be provided. New wharves and jetties must be designed for and provide access to waste service vehicles and emergency response vehicles as appropriate.

11.2.7. Impact on Port Operations

The design and construction of tidal works must not impede either current or possible future Port operations. The proponent must assess the proposed development for consistency with both the approved LUP, as well as any published Port Development Plan or Port Master Plan prepared by either Port or by the Queensland Government for the Port.

On completion of any construction activity in tidal waters, a seabed inspection must be provided to Port confirming that no foreign materials have fallen to the seabed.

11.2.8. Coastal zone/erosion

Tidal works does not increase the risk of coastal erosion or impact upon the structural integrity of sea wall / rock revetments.

Tidal works and development within the coastal zone is designed and located to minimise susceptibility to, and the impacts of, storm tide inundation and erosion. Structures used for the manufacture or storage of hazardous materials in bulk are designed to prevent the intrusion of waters from a defined storm tide event.

Tidal works and development within the coastal zone are designed to ensure they can continue to function safely following extreme weather events. Tidal works and development within the coastal zone must meet relevant building and engineering standards.

11.2.9. Protection of the Environment

The development must not discharge pollutants to the surrounding waterways or cause harm to the marine environment. All Tidal works and development within the coastal zone meets the Queensland Water Quality Objectives.

The Proponent must include measures and controls to protect the local marine environmental values. Both a Construction Environmental Management Plan (CEMP) and an Operational Environmental Management Plan (OEMP) must be submitted as part of the application.

For the CEMP, particular focus is required on activities over or in water e.g. abrasive blasting, spray painting, pile driving etc. For the OEMP, matters such as noise, light, stormwater management; waste management; marine pest management; ongoing maintenance; and spill prevention and response would be key matters to be addressed. Both plans must include an environmental monitoring and reporting program. More guidance on the items to be included in the EMPs can be found in Appendix 2.

11.2.10. Safety and Emergency Response

Marine infrastructure is to be designed for safe use. A Safety Management Plan must be prepared, covering both construction and operational phases. Public as well as worker safety must be addressed.

The Proponent is also required to prepare a Marine Operations Plan to cover both the construction and on-going operation of the marine infrastructure. This plan is to include measures to ensure the marine safety of simultaneous marine activities by one or more unrelated contractors, proponents or Port users. The proponent is to work with Port to develop protocols and specific requirements to appropriately deal with simultaneous operations.

An Emergency Management Plan must be provided that addresses the following as a minimum: Cyclone response procedures; Fire; Person overboard; and Oil or chemical spill.

Cyclone response plans must be established in consultation with Port and the Regional Harbour Master. The Proponent must ensure that its response plan references the mandated governance role of Port over the Port and the responsibilities of the Regional Harbour Master who has ultimate sanction on Port closure.

Oil and chemical response plans must be established in consultation with the Port. It must provide procedures for responding to a spill (e.g. stopping any leak at the source, notifications to Port etc). It must include the statutory roles and responsibilities for oil spill response in Queensland.

11.2.11. Dredging Requirements

The proponent must provide details of any dredging required to support new marine infrastructure. Dredging should be minimised as far as practicable.

Maintenance Dredging

Port has developed a Long-Term Maintenance Dredging Management Plan (LTMDMP) to meet the requirements of the Maintenance Dredging Strategy and Guidelines for Long-Term Maintenance Dredging Management Plans. The LMDMP (2019-2029) has a long-term focus of 10 years with a minimum five yearly review framework, to address state and Commonwealth approval requirements. The LTMDMP (POT 2128) is available on the Ports website.

The LTMDMP creates a framework for continuous improvement in the environmental performance of maintenance dredging, including minimising dredging requirements where possible. The plan analyses historical and future dredging requirements, considers sediment characteristics and recognises the Outstanding Universal Value of the GBRWHA.

Under the LTMDMP, an environmental management plan is prepared to manage dredging activities for each maintenance dredge campaign.

Port's Technical Advisory and Consultative Committee (TACC), established in the early 1990's, provides independent oversight of the planning and monitoring process for maintenance dredging.

Capital Dredging

For Ports within the Great Barrier Reef World Heritage Area, under the *Sustainable Port Development Act 2015*, all capital dredged material must be either beneficially reused or brought onto shore. The Port of Townsville is a Master Planned port. Subject to obtaining all necessary state and Commonwealth permit approvals, the Ports Act allows capital dredging within the master planned area providing the material generated is beneficially reused. Beneficial reuse is the practice of using dredged material for a purpose that provides social, economic, or environmental benefits (or a combination of these). This means dredged material is managed as a valuable resource. Future port-related capital dredging cannot occur outside the master planned area.

Capital dredging requires separate permits under both State and Commonwealth legislation.

Prior to commencement of any project that requires dredging, the proponent should engage with Port's environmental specialists to determine management requirements for the project including permits and approvals.

11.2.12. Hydrographic Requirements

Proponents should consult with Port and the Regional Harbour Master prior to conducting any hydrographic surveys in Lucinda or Townsville Ports. All hydrographic surveys must be conducted in accordance with MSQ requirements and supplied to both MSQ and Port on completion of the survey.

11.3. Next Level Guidance

11.3.1. Living seawalls

Proponents should consider opportunities to incorporate ecological engineering of marine infrastructure to promote biodiversity and improve biosecurity outcomes. Examples include living seawalls by the Sydney Institute of Marine Science (https://www.livingseawalls.com.au/).

12. LINES AND SIGNS

12.1. Objectives

a) Provide the opportunity for Port businesses to identify their business and location within their own lease boundary.
b) Provide clear information or directions for Port users and visitors.
c) Ensure signage does not compromise Port or visitor safety and has been designed and erected to withstand cyclonic conditions.
d) Ensure signage does not detract from the visual amenity of the Port and is effective and consistent across the Port in appearance and design.

12.2. Specific Requirements

12.2.1. Approvals Required

Signage on the development site that meets the requirements in section 7 does not need to be specifically approved by Port if it complies fully with the following guidelines. Port may request removal of non-compliant signs at the Proponent's cost.

Port approval (LOC) must be sought for any signs proposed that do not comply with all of the requirements below. Sufficient details must be provided (size, wording, materials, supporting structure, location etc) to allow an evaluation of the sign. Signs that may adversely affect the streetscape will not be approved.

Road and traffic signs and line marking within the Port are the sole responsibility of Port. Any signage erected next to Port roads must comply with *Traffic and Road Use Management Manual* supplemented by the Queensland *Manual of Uniform Traffic Control Devices* (MUTCD) standards. Design exceptions may apply and must be documented in the approval request.

Any signs erected must also comply with published standards of the Local Council where the leased sites are next to a Council controlled road.

A tenant or Port user shall not erect any road or traffic signs within 2m from the boundary line, apart from temporary signs authorised by Port for construction or maintenance activities.

12.2.2. General Requirements

The following provisions apply to all proposed signage:

(i) The content of signage must be directly related to the site use. Third party signage is not allowed;
(ii) All signage must be wholly located within the lease boundary;
(iii) Signs may not be erected near or above the roofline of a building;
(iv) Signage is not allowed to be painted on rooftops;
(v) Other than Directional/Security/Safety signs, no signage is to be attached to the fence frontage;
(vi) Signage may be illuminated but cannot flash, revolve, move or contain mechanisms that give the impression of movement;
(vii) Light from a sign is to be minimised and confined on site. Any light associated with a sign must not create a nuisance to adjoining sites, to Port navigation or to vehicular traffic and wildlife;

(viii) All signs must be constructed of high-quality materials that are weatherproof and will not deteriorate over time. Colours and designs of signs must complement the site development and the overall Port;

(ix) Signage must be securely fastened to the structure supporting it. Fixings and the supporting structure must be designed to withstand cyclonic winds expected in the area;

(x) A sign must not obstruct or impede the sight lines required for the safe movement of traffic into or from a street, vehicle circulation path etc; and

(xi) The sign must not detrimentally affect the structural integrity of the building or structure on which it is attached.

12.2.3. Business Identification Signs

Each site is permitted to have a business identification sign near its site entry point. This sign will identify the business name and may include details of the nature or type of the business (e.g. "light vehicle workshop"), business hours and contact phone numbers. Business identification signs are not allowed to be attached to a fence. Any business sign must be installed within the lease area.

A sign must not be erected on a road reserve within the Port or on any footpath. Wall Signs and Freestanding Signs are allowed for Business Identification Signs. The types of Freestanding Signs allowed include pole signs and pylon signs. All other signage such as banners, flags, A-frame, and third-party signs are not supported.

Freestanding signs

A Freestanding Sign is a sign that is independent of a building and is supported by one or more columns, poles or pylons. Freestanding signs allowed include pole signs and pylon signs. In addition to the general provisions that relate to all signs, the following also apply:

- Only one Freestanding Sign is permitted per street frontage.
- The Freestanding Sign must not exceed 4.5 m^2 in sign face area per side and cannot exceed 6 m in height.
- The Freestanding Sign may identify the business but must not contain any advertising content about the quality or range of the company's products or services or about other company's products or services.
- The Freestanding Sign may be combined with a Directional/ Security sign.
- Any free-standing signage or signage mounted on fencing must be certified by a Registered Professional Engineer of Queensland to the effect that it is structurally sound and incorporates mountings and foundations capable of withstanding the loadings of the sign and the weather conditions (wind loadings) experienced at the location of the signage.
- Any structure supporting free-standing signage does not (in any way) compromise the structural integrity of any underground services or infrastructure, (e.g. water, sewer, electricity, telecommunications, underground service lines etc). The Proponent will be required to initiate a search for such underground services as part of the Port's excavation permit process and confirm that their integrity shall be assured for the development of free-standing signage.

Wall or Facade Sign

A Wall or Facade Sign is defined as a sign that is painted or affixed parallel to a wall of a building. In addition to the general provisions that relate to all signs, the following also applies to Wall/ Facade Signs:

- The sign must not project more than 300 mm from the facade;
- It must not exceed 4.5 m^2 in sign face area or exceed 20% of the area of that wall;

- It must be wholly contained within the outline of the building and complement its scale and design; and
- It must not contain any advertising content.

12.2.4. Safety Signage

Safety signage such as HAZCHEM classification or Dangerous Goods placarding, Personal Protective Equipment (PPE) signage or site speed signs may be attached to a building or on a security fence near the site entry point or on a free-standing sign in accordance with all relevant Australia Standards. Any sign erected must not endanger public or Port user safety.

12.2.5. Directional and Security Signs

Directional/Security signs direct traffic and outline security/safety matters relating to the site in accordance with all relevant Australia Standards. They are usually attached to the front fence of a site but can be combined with a Freestanding Sign.

Only one Directional/Security Sign is permitted per 25 linear metres of road frontage lease boundary. The Directional or Security Sign must not exceed 0.5 m^2 in area. The Directional or Security Sign must be fixed to a boundary fence, wall or gate with a permanent fixing method or otherwise combined with a Freestanding Sign. The Directional or Security Sign must be metallic.

All directional signs on Port land will be provided in accordance with the standards defined for development outside the Port in Queensland Transport's Manual of Uniform Traffic Control Devices.

12.2.6. Construction Sites

The above requirements also apply to construction sites. Any sign associated with a construction site must be removed within ten days of completion of the construction activities.

12.2.7. Advertising Signs

Advertising or promotional signs, other than the single business identification sign at the site entry, are not allowed within the Port area.

12.2.8. Electoral Signs

Electoral signs for candidates in elections are not allowed within the Port area.

12.2.9. Maintenance of signs

All signs must be replaced ('like for like') when the signs have faded, are damaged or unable to be read and are no longer fit for purpose.

12.2.10. Line marking

Anything within 5 metres of the exit/entrance of a site is to comply with TMR guidelines. All outside the fence (cross-overs etc) are to meet TMR standards and paint specifications. It is recommended that all other line marking comply with this standard as far as practicable.

13. LIGHTING

13.1. Objectives

a) Site lighting provided must provide a safe working environment;
b) All internal and external lighting must comply with the BCA.
c) Lighting must not interfere with navigational or other safety lighting;
d) Lighting must not adversely impact surrounding development, operations, community or sensitive environmental areas including fauna; and
e) Energy efficiency and greenhouse gas emissions should be a consideration in the design and selection of all site lighting, with an aim to minimise non-renewable energy consumption.

13.2. Specific Requirements

13.2.1. Indoor Lighting

Indoor lighting solutions should consider the following:

(i) Use different energy efficient lighting solutions for different areas, based on the lighting needs of the area.
(ii) Incorporate natural lighting into the building design through the use of measures such as skylights in buildings or translucent roof panels in warehouses;
(iii) Assess options for zoning to allow lights in specific areas to be turned off when areas are not being used, as well as dimming of lights to reduce energy consumption; and
(iv) Use occupant sensors that switch off room lighting when the space is not occupied.

Natural daylight should be maximised through the design and orientation of buildings to maximise the penetration of natural daylight into interior areas of buildings. In this regard, the Proponent will design buildings to maximise the use of natural light and minimise energy use for artificial lighting, whilst meeting lighting performance standards required for each area. Natural lighting is incorporated into a building, where appropriate, e.g. translucent roof sheeting, atriums, skylights without unacceptable increases in heat.

Where natural lighting is employed to any part of a building (including near windows), artificial lighting to the same area must be controlled by ambient light sensors to minimise operation when there is sufficient daylight. Daylight sensors prevent artificial lighting from switching on until there is insufficient light.

Building interiors should be painted in light colours, as dark colours absorb light, increasing the amount of lighting required.

13.2.2. External Lighting

External lighting should be designed to light up the buildings and ground without spilling into other buildings, neighbouring sites, the sky, or surrounding environmental areas. Lighting is to be positioned so as not to cause distraction to vehicles on internal or external roads or to interfere with navigational aids.

Light spill outside the site boundary is to be avoided through:

- Directing lights downwards to the task.
- Using light shades or shields on lighting fixtures to reduce light spillage outside the footprint area to sensitive areas;

- Installing screening such as walls, vegetation barriers and other structures to shield sensitive areas against light; and
- Avoiding excessive height of lighting structures.

13.2.3. Safety

For the general working environment, Work Health and Safety Regulations require that lighting is sufficient to enable workers to carry out their tasks and move about without risk to health and safety. Australian Standard AS/NZS 1680.5:2012 Interior and workplace lighting – Part 5: Outdoor workplace lighting provides recommended light technical parameters for general outdoors use.

Lighting levels are to be provided in a manner sufficient to meet operational requirements, without causing light spill to adjoining properties or sensitive environmental areas. Appropriate lighting should be provided at key locations such as pedestrian paths, driveways, parking areas, building entrances / exits, so as to identify and provide safe access for employees and visitors.

13.2.4. Environment

Light plays a key role in animal behaviour including as a directional cue for navigation. Many nocturnal species and seabirds are sensitive to light pollution and can become disorientated by intense sources of artificial light.

For new facilities or upgrades to existing facilities that include night time operations, a Light Pollution assessment must be completed by an appropriately qualified and experienced light pollution expert to identify light pollution sensitive receptors and assess light pollution risk to sensitive receptors with reference to the National Light Pollution Guidelines for Wildlife January 2020 (Department of Environment and Energy, 2020).

13.2.5. Energy Efficiency

Energy efficient lighting technologies are to be used to reduce energy consumption and carbon emissions. Numerous energy efficient technologies are available, such as LEDs, and an assessment of the appropriate technology for the particular application should be undertaken by the Proponent.

Solar powered lighting solutions are also available and may suit applications such as parking, car storage or laydown areas.

The type of lighting selected to be used should be advised to Port in the supporting information.

14. FENCING AND SECURITY

14.1. Objectives

a) Sites are to be fenced to meet the Port's security and safety requirements, which will include where appropriate meeting the requirements of the *Maritime Security and Off-Shore Facilities Security Act 2003* for security regulated facilities under the Act.
b) Fencing is not to adversely affect the Port amenity, streetscape or injure fauna.

14.2. Specific Requirements

14.2.1. Areas to be Fenced

Activities undertaken on site that may pose a direct physical hazard or potential hazard to the public are fenced and gated so that access is restricted. The fencing is to follow the lease boundary, as far as practicable.

Temporary fencing may be used around construction sites. These fences must be installed prior to the commencement of any construction activities and removed within ten days of completion of construction activities.

14.2.2. Permanent Fencing Standard

All permanent fencing must comply with the latest version of AS1725: Chain-link fabric security fencing and gates. All fencing is to be chain wire mesh, at least 1.8 m high, with an option to include an additional 3 strands of barbed wire along the top above the wire mesh at the Proponent's choice. Fences are not to exceed 3m in height, including the barbed wire. Chain wire is to be PVC coated and black in colour for all fencing. Support posts shall be black in colour along the front fence or any fence bordering a road. Support posts inside or rear fences may be either be black or galvanized.

Landscaping close to fences must consider *Maritime Transport and Offshore Security Act* requirements, ensuring that large trees and plantings are not situated immediately next to fences to facilitate unauthorized entry into a site.

14.2.3. Gates

All access points are to be secured with black chain wire mesh gates, or black steel palisade security gates where a higher level of resistance to forced entry is required. All gates must slide or open into the site. Gates for truck entry must be setback from the road to ensure no truck queuing occurs on a road.

14.2.4. Fauna friendly fencing

Consideration should be given to whether the additional 3 strands of barbed wire is required at the site, depending on the location and nature of operations. If not required, this should be omitted from the fencing design.

Where barbed wire is required for security purposes, fauna friendly fence tags must be incorporated into the fence design to minimize the potential hazard to wildlife such as birds and bats.

15. SAFETY AND HAZARD MANAGEMENT

15.1. Objectives

a) Provide a safe working environment for Port users and visitors.
b) Minimise the hazards and risks of developments to Port users and local communities.
c) Locate hazardous industries or infrastructure in appropriate areas and away from sensitive receptors.

15.2. Specific Requirements

15.2.1. Compliance with legislation and standards

The proposed structure and/or works meet all Commonwealth and State legislative requirements and/or Australian Standards regarding safety and risk management including required firefighting infrastructure.

The Proponent will obtain and maintain any licences or permits required under legislation for the construction and on-going operation of the facility. New development must comply with the Queensland State Planning Policy (SPP) and associated guidelines and mapping.

Development must not pose a safety risk or fire hazard to adjoining development or property.

15.2.2. Safety Management Plan

The Proponent and its appointed contractors are required to ensure that a workplace plan that meets the requirements of Queensland *Work Health and Safety Act 2011* is developed and implemented during construction.

A Safety Management Plan must be submitted by the Proponent to the Port prior to operations being undertaken on site.

15.2.3. Site Operations

All activities required for operations of a site, such as truck movements and staff parking, must be undertaken within the lease boundaries.

Public access must be effectively managed to ensure it does not interfere with the safe operation of the site or overall Port, or cause risk to the public. Active work areas must be physically segregated from publicly accessible areas, such as visitor and staff parking.

15.2.4. Materials Storage

The storage of any materials in drums, stockpiles or other means must be safe and not pose a safety, environmental or health threat to site users, the public or visitors, or to adjoining areas. Unauthorised access to the storage area must be effectively controlled through appropriate security measures. Materials storage areas must not be in the front of the site, and they should be screened to protect visual amenity.

The temporary or permanent storage of empty shipping containers, drums or pallets must be carried out in a safe manner that does not pose to a risk to site users, visitors, the general public and neighbouring site users. Empty drums must be stored such that rainwater cannot accumulate in the drums through means such as lids or storing under cover.

Bunding or Dangerous Good cabinets must be provided around stored material to contain any spills that may occur and meet the relevant AS standard. Spill kits must be provided suitable to the hydrocarbon or chemicals being stored and in sufficient quantity relative to the volume being stored.

Stockpiled products should be stored in buildings where practical to minimise dust emissions. External stockpiles are discouraged by the Port, however where the size of the stockpile may make this impractical, a range of measures to minimise windblown dust or particulate matter and monitor dust emissions will need to be proposed (e.g. covers, wind breaks etc) and subject to Port approval.

For ERA50 bulk material handling (bulk materials and minerals), the Department of Environment and Science (DES) sets standard conditions for all operators at the Port of Townsville (see link https://environment.des.qld.gov.au/assets/documents/regulation/pr-co-bulk-handling-minerals-townsville.pdf). Refer to the Environmental Management section for more details (Section 20).

15.2.5. Hydrocarbon, Chemical, or Product Storage

All hydrocarbon (e.g. fuel, bitumen), chemical (e.g. caustic acid, sulphuric acid) and product (e.g. molasses, cement) storage must be above ground (unless otherwise approved by the Port) and accord with all relevant AS (AS1940, AS3780) and the advice of *Work Health & Safety Act 2011*. Bunds must meet the volumetric requirements for storage of the largest tank, have an impermeable base and tanks are positioned relative to walls of bunds to meet the relevant crest/locus requirements.

The Proponent must hold any licence required for such storage or handling. The storage of the materials must not pose a safety or health risk to any adjoining areas or people and must be appropriately separated from any sensitive land uses.

Bunding or Dangerous Good cabinets must be provided around stored material to contain any spills that may occur and meet the relevant AS standard. Spill kits must be provided suitable to the hydrocarbon or chemicals being stored and in sufficient quantity relative to the volume being stored.

For wharves where petroleum, chemical or product products are loaded or unloaded in bulk must have measures in place to contain potential spills from hoses or pipework connecting to a ship.

15.2.6. Pipelines

Any pipelines external to a Proponent's site must be located within a pipeline corridor designated and approved by Port. Pipelines are preferred to be above ground, where practicable.

Where underground pipelines are approved by Port, they must:

- be clearly marked throughout its length;
- have a leak detection system; and
- be suitably protected against corrosion.

15.2.7. Risk Assessments

If a new hazardous facility or a material expansion of an existing hazardous facility involving dangerous goods is proposed, Proponents are to undertake a risk assessment to Port's requirements and supply this to Port as part of the supporting information. Information provided will include the identification of all significant safety or environmental risks from the development and proposed mitigation measures. A Hazard and Operability Study (HAZOP) must be undertaken and provided to Port as part of the supporting information. In addition, the relevant Piping and Instrumentation Diagram (P&ID) must also be provided. The risk assessment will include updating the overall Port's risk contours for the development.

Port reserves the right to undertake its own risk assessment and Proponents must supply the information requested by Port to undertake this assessment. Port will undertake this work at the Proponent's cost.

15.2.8. Asbestos

Asbestos containing materials (ACM) have been used historically at the Port of Townsville and Lucinda (e.g. buildings or pipework). Port maintains an Asbestos Register for known asbestos in Port of Townsville. Port tenants are required to keep a register of any asbestos containing materials on their lease area and follow the relevant advice of *Work Health and Safety Act 2011*.

15.2.9. Major Hazard Facilities

Major Hazard Facilities (MHF) are locations such as oil refineries, chemical plants and large fuel and chemical storage sites where large quantities of hazardous materials are stored, handled or processed. The facility may be an existing site, a modification to an existing site or a facility under construction. Such workplaces are referred to as a possible major hazard facility and are subject to a determination process to assess whether the workplace should be licensed as an MHF.

The determination decision is based on the potential for a major incident to occur at the facility having regard to any relevant matter, including:

- the quantity and combination of schedule 15 chemicals present or likely to be present at the facility
- the type of activity at the facility that involves the schedule 15 chemicals
- land use and other activities in the surrounding area

Workplace Health and Safety Queensland (WHSQ) advises planning authorities on the appropriate location of hazardous chemical facilities and other significant chemical stores to help reduce risk to the public. WHSQ is a technical referral agency under the Planning Act. Any development application that involves a confirmed or possible Major Hazard Facility is required to be referred to WHSQ for assessment as a referral agency.

Proponents are encouraged to engage with WHSQ and the Port at the earliest opportunity as approvals for these facilities can be lengthy.

15.2.10. Provide a Healthy Indoor Building Environment

Building materials, adhesives, sealants and finishes should not be harmful to the health of building users. Ensuring materials such as floor finishes (carpet, linoleum) and paint finishes do not contain or release particulate or gaseous contaminants, such as volatile organic compounds, is essential to minimise potential health hazards.

Air quality is to be maintained by introducing adequate amounts of outside air into the air system as per the relevant AS. Air filters are installed in ventilation systems to remove particulate contamination. Microbial control measures are adopted to minimize the potential for microbial contamination of air systems (see AS3666).

16. SUSTAINABILITY

16.1. Objectives

a) Buildings must incorporate sustainable building design features appropriate to the scale of the development;
b) Ensure high energy efficiency of new buildings and developments and minimise non-renewable energy consumption;
c) Design buildings to consider the existing natural environment and to consider the lifecycle impacts in building materials selection;
d) Reduce the use of potable water and encourage the recycling of water; and
e) Minimise waste generation and facilitate reuse and recycling of materials to support a circular economy.
f) Contribute to Port Vision 2050 objectives relating to water, waste and energy.

16.2. Specific Requirements

A key aspect of Port Vision 2050 is to build sustainable infrastructure using our precious resources efficiently. Port developments must incorporate sustainability into the design and operations, minimizing energy and water usage and waste production. Key goals are for the entire Port Community to be a Zero Waste and Water Positive Port by 2050. All developments must contribute these goals.

Below are the minimum requirements for all new Port development. Proponents are expected to consider the sustainable elements of a project from the initial concept preparation, in the design and procurement stages, through to construction and operation. This should result in a project that has minimised its physical and carbon footprints, protected existing environmental values and meets community expectations.

16.2.1. Energy Efficiency

Buildings, including sheds and warehouses, are to be oriented, designed and constructed to maximise the use of natural ventilation (including roof ventilators and operable windows) and natural lighting and to minimise energy consumption associated with heating, cooling and lighting.

Light colours are to be used in roofing and external facades to reflect heat. Concrete or slab external walls must be painted. Insulation is to be applied to roofs, ceilings and external walls.

Roof ventilation systems, such as perforated eaves and roofing ventilators, are to be included to reduce building air conditioning loads. Air conditioning systems are to be on a timer set to when staff are in the office and which switches off outside these times.

Energy efficient equipment and appliances should be specified, installed and properly maintained to maximise design efficiency performance (i.e. Equipment Energy Efficiency (E3) program).

Shade trees should be planted on the west and east of buildings to shade walls and windows from low angle morning and afternoon sun.

16.2.2. Water Conservation

The Port is aiming to be a water positive Port by 2050 and as such all developments must utilize water resources efficiently, conserving and reusing and recycling water as far as practicable.

The Proponent must minimise water use and wastewater generation by the use of water conserving features, such as water-efficient toilets, showers and taps. Proponents are encouraged to use a minimum of 4 star rated equipment on the Water Efficiency Labelling Scheme (WELS).

Facilities are encouraged to collect site rainwater in dams/tanks and recycle on site to minimise the use of potable water for industrial uses. Minimise use of impermeable surfaces if not required for hard-standing or traffic and design non- operational areas with porous surfaces or landscaping.

Dry Tropics or other native plant species that require low water usage are to be used in any site landscaping. Subsurface irrigation systems will minimise water loss. Existing mature vegetation should be retained where possible because of their role in the natural water cycle.

Any development involving purpose-built wash bay facilities must include a wash-water recycling system. In this regard, the Proponent should confirm and illustrate the type and capacity of water storage infrastructure to be provided on site.

16.2.3. Waste Minimisation

Port is aiming to be a Zero Waste Port by 2050. As such waste management and minimization is critical for developments. Waste reduction is to be a key consideration during the construction and operation of a new development. Construction waste should be minimised through materials selection and recycling of this waste should be maximised.

During both the construction and operating phases, waste is to be stored in a dedicated area which has easy access for both use and waste collection. Waste is to be segregated into general waste and recyclable material. Waste steel is to be collected and sold for scrap.

16.2.4. Solar Energy

The Port is aiming to be carbon neutral and using 100% renewable energy by 2025 for its own operations. The Whole Port community will be carbon positive by 2050. Given the location of the Townsville and Lucinda Port's in North Queensland, solar technology has been identified as a suitable renewable energy technology.

Port requires all new developments with warehouses, sheds and office buildings to incorporate rooftop solar from commencement of operations or if Port approves a deferment in the installation, as a minimum engineer the roof structure to accommodate a future solar array. Existing facilities will be encouraged to retrofit their existing premises before 2050.

Key components to consider as part of preparing a new site for solar or retrofitting an existing premises for solar, include –

- Roof design is capable of withstanding proposed solar panel loads, taking into account that the weight of solar infrastructure is progressively decreasing;
- Orientation of the building and roof;
- Determining what area of the roof will be required to accommodate the desired level of solar taking into account the aspect of the roof panels to optimise light exposure from the sun;
- Ease of future retrofitting i.e. wiring & metering;
- Network Connection Arrangements i.e. connection to existing substations

Solar hot water systems should be included if possible.

16.3. Next Level Guidance

16.3.1. Sustainable Building Materials

The sustainability of the building materials used in construction should be considered in their selection and should consider the lifecycle impact of the materials (procurement, construction and eventual disposal).

Sustainable outcomes for building materials can be achieved by efforts to:

- Maximise the use of recycled products.
- Minimise the use of non-renewable construction materials.
- Source materials locally where possible to minimise energy consumption from transport.
- Use recycled timbers where practical or otherwise source timber from certified plantations where the timber is harvested using sustainable practices and certified independently (i.e. Forest Stewardship Council's (FSC) certification scheme).
- Use low maintenance materials to reduce lifecycle impacts.
- Evaluate all products for their ability to be repaired, recycled or reused when they reach the end of their useful life.
- Avoid materials and products requiring toxic chemicals in their manufacturing processes.
- Prevent entry to buildings by insect and pests by mechanical means or sealing rather than chemical means.

16.3.2. Renewable Energy

Port will work with Port Customers to maximize renewable energy opportunities by working together as a Port community.

Proponents are encouraged to consider using renewable energy sources at the Ports of Townsville and Lucinda as far as practicable. Such initiatives could include:

- the use of higher efficiency petrol, diesel and/or LPG engine forklifts and other vehicles (converted or manufacturer supply);
- the use of vehicles that use (either wholly or in part) commercial biofuels, e.g. Biodiesel and Ethanol;
- the use of electric vehicles (forklifts, straddles, trucks, boats, locomotives);
- the use of hydrogen powered vehicles (e.g. trucks, locomotives);
- the use of solar/wind combinations for lighting or security installations; and
- renewable energy shore power connections for visiting vessels.

17. LANDSCAPING AND 1 MILLION TREES

17.1. Objectives

a) Landscaping of the site must be incorporated into the site design to enhance the amenity of the development and soften the built form, as well as complementing the natural values of the area.
b) Landscaping shall use low maintenance, drought tolerant, native plants that contribute to the environmental values of the area.
c) Contribute to Port Vision 2050 objective of planting 1 million trees by 2050.

17.2. Specific Requirements

17.2.1. Landscape Design

Landscaping promotes the character of the area and is of an appropriate scale and type relative to the size and nature of development and its surroundings. Port has undertaken an extensive tree inventory of the Ports of Townsville and Lucinda. Existing on-site vegetation is retained wherever possible. Existing trees are protected during construction.

Landscape design:

- is of a high quality that focuses on all road and other public space frontages to enhance the overall amenity of the streetscape;
- is maintained to a high level;
- is designed to require limited watering and maintenance; and
- is integrated with the site's stormwater management system

Landscaping is sited and designed considering site-specific conditions. The landscape design is to highlight the main entry to the site. The landscaping area shall include a solid border defining the area. Landscape forms, such as mounds or swales, should be included in the landscape design to provide visual interest to the area. Protective measures, such as kerbing, wheel stops and/or bollards, are used to protect landscaping from being damaged.

On-site landscaping is designed to provide open space areas for the enjoyment of employees, to provide landscaping to the frontages of the site and to provide screening to car parks and other service areas. The positioning of landscaping should consider potential benefits to staff amenity, such as screening of unwanted light, noise or dust. Screening vegetation is provided of a suitable width and density to act as a buffer between adjoining different land uses

Soil preparation is implemented to provide every chance of survival of newly landscaped areas. The area is to be mulched to reduce water loss and inhibit weed growth. Stones and pebbles may be used along drainage areas as an alternative to wood product. Garden beds should be regularly re-mulched to reduce evaporation.

The area shall be irrigated for a minimum of 12 months to ensure establishment of the new vegetation and ongoing as required. Water supply from collected rainwater is recommended, supplemented with potable water as required. Sub-surface watering is programmed for early morning or late afternoon to minimise evaporation.

Landscaping incorporates predominantly local native species which are suited to the environmental and climatic conditions to provide food for native birds and wildlife. For sites close to the marine environment, more salt tolerant species may be more appropriate. Species are selected to ensure that the plants do not

create hazards for port operations and associated uses and activities. In landscaped areas, trees and vegetation are selected and located to provide as much shade as possible. The landscaped area shall include a mixture of low growing ground covers, medium shrubs and taller trees (where there is sufficient width in the landscape design). Plants are to be planted in the ground, not in pots above the ground. Table Table 7 outlines species that grow well in the local environment and complement the existing landscaping at the Ports of Townsville and Lucinda. Alternative species can be suggested by the Proponent as part of the supporting information.

Species selected should not create potential hazards for operations of the Port. Plant species are selected and sited to ensure that overhead or underground services are not adversely impacted upon. Select trees that do not have vigorous root systems within service easements. Where trees are planted near designated vehicle entry points, thoroughfares, driveways, corners, roundabouts or pedestrian crossings, the Proponent shall consider vehicle sight lines. Avoid using shrubs with sharp or spiky foliage in areas such as pathways where they may cause injuries.

The trunks of trees are not to be closer than 2.5 m to the perimeter fence and no part of the tree is to overhang the adjoining site. Lower hanging branches of trees shall be pruned to maintain adequate branch clearance from security fencing.

Trees should be used in car parking areas to provide shade, with the trees evenly distributed through the car parking area, noting that some species (such as the Beach Almond) may not be suitable due to seed pods being dropped to the vehicles below. All landscaping, particularly within car parks and along pedestrian paths, is to consider the security needs of users of the area and allow for passive surveillance of the area.

Where landscaping large areas, Port recommends that a landscape design be prepared by a Landscape Architect, however this may not be warranted for smaller sites if the above criteria are followed.

Developments adjacent to working wharfs may be exempt from some of these requirements, due to Biosecurity requirements.

Examples of landscaping at the Port of Townsville

Table 7: Recommended plant species list

TREES		
Species	**Common Name**	**Height (m)**
Arytera divaricata	Rose Tamarind	5-8m
Cochlospermum gillivraei	Kapok	3-8m
Carallia brachiata	Corkwood	5-10m
Erythrina verspertilo	Bat's Wind Coral Tree	6-8m
Corymbia tessellaris	Moreton Bay Ash	10-15m
Eucalyptus tereticornis	Blue Gum	20-30m
Ficus opposita	Small-leaved fig	10-15m
Melaleuca leucadendron	Paper Bark	10-15m
Pandanus whitei	Screw Palm	6-8m
Planchonia careya	Cocky Apple	8m
Canarium australianum	White Beech	8-12m
Casuarina cunninghamiana	River Oak	10-30m
Cordia dichotoma	Cordia	5-10m
Cupaniopsis anacdioides	Tuckeroo	4-8m
Ficus racemosa	Cluster Fig	8-20m
Lophostemon grandiflorus	Northern Swamp Mahogany	8-12m
Mimusops elengi	Red Coondoo	10-12m
Nauclea orientalis	Leichhardt Tree	10-18m
Pleiogynium timorense	Burdekin Plum	12m
Pongamia pinnata	Pongamia	5-10m
Terminalia seriocarpa	Damson Plum	10-20m
Brachychiton australis	Broad Leaved Bottletree	15m
Calphyllum inophyllum	Satin Touriga	10-20m
Castanospermum austral	Black Bean	10-30m
Eucalyptus platyphylla	Poplar Gum	8-15m
Ganophyllum falcatum	Scaly Ash	8-12m
Harpullia pendula	Tulipwood	8-10m
Mallotus philippensis	Red Kamala	10m
Melaleuca dealbata	Blue Paperbark	5-12m
Melia azedarach	White Cedar	8-10m
SHRUBS		
Acacia leptostachya	Townsville Wattle	Up to 5m
Acacia simsii	Sim's Wattle	2 – 4m
Antidesma parvifolium	Currant Bush	2-3m
Bursaria tenuifolia	Bursaria	3-6m
Eustrapheus latifolius	Wombat Berry	1-2m
Grevilla pteridifolia	Golden Grevillea	4-8m
Grewia retusifolia	Dog's Balls	1-2m
Morinda citrifolia	Cheesefruit	3-6m
GROUND COVER AND CLIMBING PLANTS		
Lomandra longifolia	Creek Matrush	1m
Apowollastonia spilanthoides	Nil	0.5m
Camptacra barbata	Camptacra	0.5m
Gardenia psidioides	Gardenia	1m
Indigofera linnaei	Birdsville Indigo	0.9m
Proiphys amboinensis	Cardwell Lily	1m
Abrus precatorius	Precatory Bean	Climbing vine

17.2.2. Landscaped Area

Unless approved otherwise by Port, the landscaped area of the site is a minimum of 5% of the leased area. The landscaped areas will include the street frontage, areas adjacent to site offices, car parking or staff recreation areas and other landscaped areas on site. Port acknowledges that for some industrial sites, a smaller landscaped area may achieve the landscaping objectives. Consequently, a Proponent may apply to the Port for a smaller landscaped area as part of the application.

17.2.3. Landscape Maintenance

Landscaped areas are to be well maintained and kept free of weeds. Dead or unhealthy plants are to be removed and replaced with new stock as necessary to maintain the original landscape design. Rubbish from the landscaped area, including fallen branches or fronds, is to be removed on a regular basis. Pruning shall be carried out on at least an annual basis to encourage desirable plant growth. Lawn areas are to be regularly mown and kept in a weed free state.

17.2.4. Hydromulching

Where hydromulching is undertaken for construction projects or revegetation projects, the standard Townsville City Council mix is suitable for use provided it is applied as per TCC guidelines. Standard TCC seed mix is typically Green Couch and Indian Couch for drought tolerance, and a small amount of Queensland Blue Couch. However, the selection of the seed mix should consider the proposed area of application. For sandy areas, the proponent may increase the Queensland Blue Couch. For areas that are directly on the coast or will be exposed to salty conditions, a seed mix appropriate to these marine conditions should be considered.

17.2.5. 1 million tree program

As part of Port Vision 2050, the Port has committed to planting 1 million trees by 2050. This will be achieved by planting on Port land including port leases and parklands and with community planting. Port Customers are encouraged to participate in the program by planting trees on their lease or electing to plant trees in buffer or parkland areas of the Port. Plants that are established as part of landscaping can contribute to this program. Proponents are encouraged to discuss the program with the Port's environment team as part of pre-lodgement discussions.

17.3. Next level guidance

17.3.1. Townsville Water Sensitive Design

Townsville is located in the Dry Tropics and water is a key issue for the city. As such, Proponents are encouraged to adopt Water Sensitive practices where possible.

Townsville City Council has undertaken significant work with the CRC for Water Sensitive Cities to prepare a strategy and tools to become an attractive, resilient city that manages water to enhance healthy ecosystems, embrace dramatic natural water cycles, drive world-leading innovation, and support citizens who are proud of their dry tropical identity.

City of Townsville's water sensitivity performance results (watersensitivecities.org.au)

Proponents are encouraged to read 'Ideas for Townsville' (Ideas for Townsville - CRC for Water sensitive cities) published by the CRC in 2020.

18. HERITAGE VALUES

18.1. Objectives

New development must not adversely affect areas of historical significance, indigenous cultural heritage or the world heritage values of the nearby Great Barrier Reef.

18.2. Specific Requirements

18.2.1. Cultural Heritage Sites

The Port of Townsville land and sea country are significant for social and cultural practices for the Wulgurukaba peoples. The Lucinda area is of importance to the Warhamay-Banjin and Nyawaygi peoples.

Section 23 of the *Aboriginal Cultural Heritage Act 2003* establishes a duty of care for all persons carrying out an activity to take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage. It is the responsibility of the person undertaking the activity to ensure compliance with the duty of care. For any previously undeveloped areas, proponents should undertake a search of the Cultural Heritage Register that is maintained by the Department of Seniors, Disability Services, and Aboriginal and Torres Strait Islander Partnerships (DSDSATSIP) to determine the presence of any areas of cultural heritage significance on the site or undertake a survey of the site by an archaeologist, assisted by representatives of the local Traditional Owners.

If there are any identified significant or listed areas on the site, a management plan will need to be prepared by the proponent and submitted to DSDSATSIP detailing how those cultural heritage values will be protected.

All excavation / trenching / dredging works are to cease immediately if any item or object (including skeletal material) is uncovered or discovered. Works cannot re-commence until the area has been cleared the relevant authorities.

18.2.2. Archaeological Artefacts

As a historic Port established in 1864, there is potential for elements of non-Indigenous cultural heritage to be encountered in Townsville. The Proponent must also comply with the *Queensland Heritage Act 1992*.

If an archaeological artefact is discovered during site preparation, work in the area must be immediately ceased and actions must be taken in accordance with the *Queensland Heritage Act 1992*.

18.2.3. World Heritage Values

The Ports of Townsville and Lucinda are located within the Great Barrier Reef World Heritage Area but are excluded from the Great Barrier Reef Marine Park. Proponents that are undertaking development at these Port's must acknowledge the Outstanding Universal Values of the Reef and ensure controls and measures are in place to protect these heritage values. The Master Plan for the Priority Port of Townsville (DTMR, 2019) outlines the local attributes of Outstanding Universal Values.

19. BIOSECURITY

19.1. Objectives

a) Take all reasonable and practical steps to prevent or minimise biosecurity risk.
b) Minimise the likelihood of causing a 'biosecurity event' and limit the consequences if such an event is caused.

19.2. Specific Requirements

Maritime ports have been identified as potential high-risk locations for new invasive species to enter Australia from international ship arrivals. Introduced species can adversely affect natural biodiversity, human health, and infrastructure locally, regionally, and nationally. The Port works in cooperation with the Commonwealth Department of Agriculture and Water Environment (DAWE) and Biosecurity Queensland (DAF) to manage biosecurity on Port land and waters.

The Port of Townsville and Lucinda have been determined as a First Point of Entry (FPOE) under the *Biosecurity Act 2015* (Cwlth). The Ports Biosecurity Management Plan (BMP) addresses the management of all biosecurity activities over which the Port has control or influence. The Port has committed to maintaining the approved BMP and will continue to comply with regulatory requirements.

The Port will encourage all Port Customers to develop and implement a Biosecurity Management Plan to meet their own requirements under the Act, those to whom Section 56 of the *Biosecurity Regulation 2016* (the Regulation) applies. The Port will provide all contractors with a clear understanding of the legislative requirements under the Act, via its signage and inductions.

The Queensland *Biosecurity Act 2014* commenced in July 2016 and establishes an effective biosecurity system that aims to minimise biosecurity risks and facilitates a coordinated response to biosecurity events. The Act imposes a General Biosecurity Obligation (GBO).

19.2.1. Compliance with legislation and standards

All development must comply fully with State and Commonwealth biosecurity legislation and policies. The proponent is responsible for applying for and maintaining compliance with any biosecurity approvals, licences or permits that may be required under legislation.

Under the Commonwealth *Biosecurity Act 2015*, operators undertaking biosecurity activities such as the handling, storage and / or cleaning of import / export cargo subject to quarantine, are required to enter an Approved Arrangement (AA) with the Department of Agriculture, Water and Environment (DAWE), in order to manage their biosecurity risks.

19.2.2. Good Housekeeping Practices

Good housekeeping must be practiced on sites and wharves to minimise the potential for spread of pest species. Empty drums must be stored such that rainwater cannot accumulate in the drums through means such as lids or storing under cover. Used or new tyres must be stored under cover or have holes drilled in the tyres to allow rainwater to drain away and not become a mosquito breeding site. Pallets must be inspected regularly to ensure that ants or bees have not built nests on the timber and could be transported off the Port. Waste material is to be stored in lidded containers to prevent rainwater ingress or access by vermin.

19.2.3. Asian Honeybee/Varroa Mite

Australia is one of the few countries in the world to remain free of varroa mite. If varroa mite were to become established in Australia our healthy population of honeybees, and the pollination services they provide, could be reduced significantly. The effects would be significant for apiarists and producers of crops that rely on pollination from bees.

The Port of Townsville is considered high risk for Asian Honeybees (*Apis cerana*) and Varroa mite (*Varroa jacobsoni*). Biosecurity Queensland (DAF) has undertaken the National Varroa Mite Eradication Program in Townsville for several years following detections in June 2016, April 2019 and 2020. These detections are now considered eradicated, however Biosecurity Queensland continues to monitor for Asian Honey Bee utilizing sentinel bee boxes and catch boxes in the Port and nearby areas.

All Proponents must ensure that they are aware of this pest species, communicating with personnel and undertaking routine inspections of tenancy areas and equipment to monitor for this species. For further information on the Varroa mite visit the DAF website.

19.2.4. White Colonial Sea Squirt

An invasive marine pest, known as the White Colonial Sea Squirt (*Didemnum perlucidum*) was detected in June 2020 at the Townsville Marine Precinct. It has also been found in Brisbane, Mackay, Abbott Point and in the Gulf of Carpentaria (south of Weipa).

It is white in colour and is known to foul submerged and floating infrastructures such as pylons, pontoons, moorings, boats, buoys and can quickly overgrow native marine species, limiting habitat and biodiversity values. It can also be found on hard natural substrates.

It is not possible to eradicate this pest species due to its high reproductive capacity and inability to effectively treat established populations or control its further spread.

Biosecurity Queensland are continuing to monitor the extent of this species and work closely with port authorities and maritime industries to minimize impacts.

All Proponents must ensure that they are aware of this pest species, communicating with personnel and undertaking routine inspections of tenancy areas and equipment especially boats/barges/anchors etc to monitor for this species. For further information on the White Colonial Sea Squirt visit the DAF website.

20. ENVIRONMENTAL MANAGEMENT

20.1. Objectives

a) Appropriate planning and design of a project must be undertaken to minimise environmental impacts from the outset of the development.
b) Any emissions or discharges from the site are to be identified in the project planning stages and appropriately managed to protect the environment.
c) Construction and operational activities must be undertaken in a manner that protects local environmental values and minimise any adverse environmental impacts.
d) The amenity of neighbouring sites and local sensitive areas, such as air and noise quality, is to be protected through appropriate controls and management techniques.
e) Contribute to Port Vision 2050 objectives of industry leading best practice, reducing emissions and creating positive outcomes.

20.2. Specific Requirements

20.2.1. Compliance with legislation and standards

All development must comply fully with State and Commonwealth environmental and planning legislation and policies. The proponent is responsible for applying for and maintaining compliance with any environmental or planning approvals, licences or permits that may be required under legislation.

20.2.2. Environmental Values

The LUPs for Townsville and Lucinda provide an overview of the environmental values at these Ports. In addition, the environmental Values for Port of Townsville are contained in the Master Plan (DTMR, 2019) and a Port document titled Environmental Values of Cleveland Bay (POT 1898) on the Port's website. These documents should be referred to when designing the site and considering environmental controls.

20.2.3. Environmental Assessment

In addition to addressing the relevant LUP Code, Proponents are to provide an environmental assessment of the proposed development to the Port with the supporting information. The assessment will include both the construction and operational stages of the development. This assessment will include the following as a minimum:

i) Identification of all potential emissions and discharges to the environment, including solids, air, water (surface water and groundwater), noise and wastes (solids and liquids). For larger projects, estimate both flow rates and contaminant loads of emission streams where possible. The Proponent may utilise Port's whole of port air, noise or hydraulic models to estimate the project emissions and assess the cumulative impact of these new emissions.
ii) Assessment of potential impacts on the receiving environment of these discharges and emissions.
iii) Details of any proposed flora and fauna removal required by the project and assessment of the environmental values of this flora and fauna and the impacts of the proposed disturbance.
iv) Details on the actions to be taken to minimise any adverse impacts of the development.
v) The cumulative impact of the development in addition to existing Port developments will need to be evaluated by the Proponent.

Depending on the nature of the project, the project may require the preparation of a full Environmental Impact Statement (EIS) by the Proponent. These triggers can be discussed as part of pre-lodgement discussions.

20.2.4. Management Plans

Proponents for new developments or modifications to existing development must supply both a Construction Environmental Management Plan for the construction stage and an Operational Environmental Management Plan for the operational stage of the development, unless exempted by Port for smaller projects. These plans must present the environmental assessment undertaken for the construction and operational phases and provide the proposed mitigation measures to manage any identified impacts. These plans will include measures to ensure the sustainability of the development as identified in Section 16 of these Guidelines.

Appendix 2 contains a template for the information required by Port in the Environmental Management Plans.

20.2.5. Air Quality

Port of Townsville is a city Port and located close to nearby sensitive receptors and as such activities that may release dust, odour, fumes, pollutants or vehicle/machinery emissions must be controlled by the Proponent. All activities are required to meet the air quality objectives at the Port, or otherwise the *Environmental Protection Policy (Air) 2019* and control fugitive and point source emissions as far as practicable. The Port of Townsville air quality objectives can be found in the Port's Boundary Air Monitoring Program (POT 1881), which is located on the Port's website.

The environmental assessment provided with the application and the Environmental Management Plans should identify potential sources of air emissions, and how these will be managed, for example:

- Dust emissions (nuisance dust) must be effectively controlled during any activities, such as site clearing, or where bare soil is exposed. Controls shall include measures such as regular water application to exposed soil or soil stockpiles, staging of works to minimise exposure of bare earth, application of dust suppressants, application of hydromulch, and revegetation or sealing of bare soil as early as practical, and landscaping to prevent the generation of dust. Minimisation / avoidance of dust generating activities during dry, windy conditions is also important. Townsville is within the Dry Tropics where water restrictions are in place regularly, so the use of water for dust suppression needs to be weighed up with other options.
- Stockpiled products should be stored in buildings where practical to minimise dust emissions. External stockpiles are discouraged by the Port, however where the size of the stockpile may make this impractical, a range of measures to minimise windblown dust or particulate matter and monitor dust emissions will need to be proposed (e.g. covers, wind breaks etc) and subject to Port approval.
- Conveyors and chutes are to be fully enclosed to minimise the release of dust or particulate matter to the atmosphere.
- Products with an offensive odour must only be stored in a sealed building or tank/vessel.
- No burning of any waste, including cleared vegetation, is allowed within a Port area.
- Premises which create thermal, gaseous or particulate emissions are located, designed and operated in a manner which protects the amenity of any surrounding areas or environmental values. This includes taking measures to remove pollutants (e.g. scrubbers or bag filters) prior to discharge to the atmosphere or reducing any temperature gradients.
- The Proponent must include effective monitoring systems to monitor and maintain ambient air quality in accordance with Port's boundary air objectives.
- Vehicles using the Port, including loading and unloading equipment must be maintained in good working order to the manufacturers standards and turned off when not in use to minimise emissions to air.

- Site areas that are used by vehicles are to be sealed to minimise dust emissions, except during a construction program or when a phased development of the site has been approved by Port. Where areas are not sealed, appropriate measures to minimise dust must be used (e.g. water truck, dust suppressants).

For ERA50 bulk material handling (bulk materials and minerals), the Department of Environment and Science (DES) sets standard conditions for all operators at the Port of Townsville (see link https://environment.des.qld.gov.au/assets/documents/regulation/pr-co-bulk-handling-minerals-townsville.pdf). These include storing minerals in fully sealed buildings or containers, no visible dust from loading/unloading activities, applying moisture control during all stages of material handling (noting Transportable Moisture Level restrictions) and requires boundary and near field monitoring.

Port of Townsville undertakes Boundary Monitoring on behalf of ERA 50 bulk minerals handlers with operators contributing a share to the operational costs for running this monitoring program. Operators are also required to operate near field monitoring. Data from the boundary program is publicly available.

The Port has also developed a Shared Air Quality Model which can be used by Proponents for a fee to assess changes to product quantities or the introduction of new products to the Port. This can be discussed in pre-lodgement meetings with the Port's environmental specialists.

Greenhouse gas air emissions are to be minimized through use of energy efficient technologies, renewable energy sources and good operational and maintenance practices.

20.2.6. Noise and Vibration

Both the Townsville and Lucinda Port operate 24-hour activities with the shipping calendar. However due to the proximity to nearby sensitive receptors, not all sites are allowed to operate 24-hour activities. Site hours of work will be specified in the lease documentation and LOC. Notably for Townsville Port, tenancies located within Nexus Park (Hubie Taylor Place) are only to be operated during daylight hours.

In accordance with the *Environmental Protection Act 1994* and *Environmental Protection Policy (Noise) 2019* all Port users have a General Environmental Duty (GED) to minimise noise from activities through appropriate management actions, with particular focus on activities at night that could impact on sensitive receptors. Proposed new developments will have regard to impact on the noise environment of the local area and not adversely affect the amenity of neighbouring industries or communities.

Appropriate noise mitigation measures are to be incorporated into design and procurement. Site layout will locate any potential noise sources away from sensitive receiving environments. All buildings and equipment are to be designed or selected to minimise noise emissions. Noise emissions of mobile equipment are to be managed through silencers and through a policy of turning off the equipment when not in use.

A noise impact assessment report is to be provided to the Port as part of the supporting information. Noise assessments should consider not only the noise levels, but the frequencies and intrusiveness of the noise generated.

The Port has developed a Whole of Port Noise model which can be used by Proponents for a fee to assess the contribution of the proposed activity/site development to the existing noise levels at the Port. This can be discussed in pre-lodgement meetings with the Port's environmental specialists.

A vibration assessment should be discussed with Port personnel during pre-lodgement and would be dependent on the nature of the development (construction and operation).

Environmental Management Plans should identify potential noise generating activities / equipment (e.g. pile driving, excavators, etc.) and how these will be managed. Noisy activities should be controlled through dampeners or enclosures at the noise source where practicable or noise barriers for more diffuse sources of noise from multiple sources.

Reverse beepers remain a source of complaint from the local community as they are an intrusive noise, so operators are required to utilise squawkers or broad band alarms or alternatives on vehicles where possible.

Construction activities should generally be limited to 6.30 am to 6.30 pm Monday to Saturday, with no work on Sundays or public holidays. Certain circumstances, such as particular work activities (e.g. concrete pours), may warrant extensions to these times and any such requests for hours of work extensions will need to be approved by Port.

20.2.7. Waste Management

Development is designed and operated in accordance with the waste and resource management hierarchy:
a) Avoid;
b) Reduce;
c) Reuse;
d) Recycle;
e) Recover;
f) Treat; and
g) Dispose.

All waste generated (both construction and general waste from onsite facilities) must be stored and disposed of to prevent release to the environment.

The contractor should provide waste receptacles of a scale and type appropriate to the works, for example skip bins, 240L general waste bins, 240L recyclable waste bins, and ensure these are serviced regularly.

All regulated waste (e.g. waste oils, batteries, etc.) must be stored appropriately on site (e.g. bunded), and disposed of by a licensed contractor.

All wastes should be segregated as appropriate, and emphasis should be placed on reuse, repair and recycling wastes as far as practicable to encourage a circular economy.

20.2.8. Flora and Fauna

The relevant Environmental Assessment and Environmental Management Plan must identify and consider any sensitive environmental values or flora and fauna present, or likely to be present, on the site or nearby, and identify how these will be managed to minimise impacts.

Important flora on site may include marine plants such as mangroves, salt couch or seagrass, for which an approval to disturb is required from Queensland's Department of Agriculture & Fisheries (https://www.daf.qld.gov.au). Important fauna may include shore birds, nocturnal animals such as possums and sugar gliders or marine fauna.

No vegetation clearing is to occur without prior assessment by a suitably qualified professional of the values and significance of the flora and fauna affected, including assessment of potential breeding places of native animals. No vegetation clearing is to occur without appropriate approval from the relevant administrating authority if required. Development must not disturb vegetation protected by the *Vegetation Management Act 1999 or Nature Conservation Act 1992* without either an approval or an exemption under the relevant Act.

If works meet the requirements of the Accepted Development Requirements under the *Planning Act* evidence is to be provided to the Port prior to any works can commence.

Where vegetation is authorized to be cleared, a fauna spotter/catcher is to be employed prior to grubbing works.

Fauna may also establish themselves in infrastructure (e.g. bats in stormwater down pipes under wharves, pigeons in roofs) and where possible the Proponent should be aware of the potential to encounter fauna and consider measures to discourage this.

20.2.9. Acid Sulphate Soils

Potential and/or actual acid sulfate soils (PASS/AASS) may be encountered during excavation works undertaken on Port land. Acid sulfate soils occur naturally in low-lying coastal areas and can cause environmental harm when disturbed and exposed to air. Oxidisation can cause the soil to become acidic (pH<6.5) and release metals which can enter the environment.

All works are to avoid disturbing potential and actual acid sulphate soils where practical and are managed to avoid or minimise the release of acid or metal contaminants, if disturbed. Management of acid sulphate soils is to be consistent with the Queensland Acid Sulphate Soil Technical Manual: Soil Management Guidelines.

20.2.10. Groundwater

Groundwater can be encountered at the Port within 1-2m below ground level, however this varies across the Port as the lithology in the Port varies depending on historical land reclamation activities. Areas on the edge of the port are influenced by sea water, affecting both the quality and standing water levels in these areas.

The Port has undertaken several potentiometric surveys to show groundwater contours and flow directions. This can be requested from Port as part of pre-lodgement discussions. The Port also maintains numerous groundwater monitoring bores across the Port and has been monitoring these bores at a high frequency since 2018. Data from the groundwater monitoring program can also be requested from Port.

Construction and operation activities must be undertaken to prevent contamination of groundwater. Where there is potential for groundwater impacts, a groundwater monitoring program must be put in place and sufficient on-going monitoring undertaken to demonstrate minimal impact on groundwater quality as a result of on-site activities.

Where groundwater is exposed and requires dewatering, it is possible to release Potential or Actual Acid Sulfate Soils, minerals and other contaminants to either land or waterways. It is also possible to extract too much groundwater, effectively 'pulling' sea / river water from adjacent waterways.

Where it is likely that groundwater will be encountered, management approaches may include:

- excavation above the water table level to minimise the volume of groundwater exposed;
- undertaking sampling of groundwater prior to excavation works;
- ongoing field monitoring (e.g. pH, metals, etc.); and
- treatment of exposed groundwater (e.g. liming, filtering, etc.).

<u>PFAS</u>

In April 2018, results from preliminary testing of groundwater detected elevated levels of Per-and Poly-fluoroalkyl Substances (PFAS) around the Port of Townsville. This testing was undertaken as part of a voluntary monitoring program by the Port.

Following this, the Port undertook a preliminary investigation with the assistance of GHD and Queensland Government Departments to understand the nature and extent of PFAS both within the port and beyond the port boundary. Since the Preliminary Investigation, the Port has undertaken extensive PFAS testing and reengaged GHD to complete a Targeted Site Investigation (TSI). The TSI involved field investigations, including drilling an additional 14 groundwater monitoring wells and collecting additional samples around the Environmental Park and receiving environments. A summary of the Preliminary and Targeted Site Investigations are available on Port's website.

In accordance with the Department of Environment and Science (DES) Operational Policy for PFAS, foam extinguishers are to be fluorine free. Proponents who utilise C6 purity fire systems must provide supporting information to Port that the arrangement meets the DES Operational Policy.

20.2.11. Land Contamination

Port requires that Proponents undertake a contaminated land investigation prior to occupation of a new lease area (baseline assessment). The land investigation is to minimise any future liability to the lessee for site clean-up not caused by the lessee's activities. An exit contamination assessment (exit assessment) shall also be undertaken prior to the end of the tenure agreement. Where contamination is identified and caused by the Proponent, a Remedial Action Plan is developed and implemented by a Suitably Qualified Person in consultation with the Port.

Any investigation undertaken should comply with relevant Queensland Contaminated Land Guidelines and the National Environment Protection (Assessment of Site Contamination) Measure 1999. Contaminants to be tested include, but are not limited to, heavy metals, PFAS (standard and TOPA), asbestos containing material (ACM) and hydrocarbons.

Many of the lots at the Port of Townsville are already listed on the Environmental Management Register (EMR). A search of the register should be undertaken as part of the application process. Where this is the case, management approaches will be required to prevent exposing contamination through excavations or other works or spreading contamination through the movement of materials off site.

Contaminants must not be discharged to the ground in a manner that could cause land contamination. Any activities that may result in land contamination must be identified and appropriate management strategies implemented in the EMP. No waste is to be buried or burned on site.

Any fill used on the site is to be free of contaminants. Port no longer accepts fill material to Port reclamation areas.

20.2.12. Stormwater Quality and Stormwater Management Plans

Stormwater has the potential to convey sediments and contaminants to sensitive environmental areas such as mangrove habitats, tidal areas, waterways and groundwater, as well as neighbouring properties. Overland flows across site must be managed. It is important to identify potential overland flow locations on site (i.e. high to low areas), and implement controls to slow, contain and control the release stormwater to prevent potential impacts. Development is required to comply with the stormwater quality requirements outlined in this guideline and consideration of the State Planning Policy (SPP).

Measures must be implemented to ensure that erosion is controlled, and sediment is not released into the surrounding environment. Erosion and sediment control measures must be included in the Construction EMP if any erosion sources are identified.

For larger projects or sites, a Stormwater Management Plan is to be prepared and supplied to the Port as part of the supporting information with the application. The Port can provide advice during pre-lodgment discussions as to the stormwater management requirements including whether a Stormwater

Management Plan is required, however reference should be made to QUDM and SPP. For guidance purposes, large projects or sites may include a new facility with an impervious area greater than 200m^2 or an upgrade to an existing facility with an increase in impervious area of 50% or more. The Port's objectives are for development to maintain or improve existing stormwater conditions and to not impact upon adjacent properties, infrastructure or the environment.

Site clearing for construction activities should be avoided where possible between December and April each year to avoid the wet season. For larger developments, carrying out clearing in stages where possible is recommended, with rehabilitation of sites occurring at the earliest opportunity in the development.

First flush stormwater from impervious areas is to be captured and treated to prevent contaminants leaving the site. The treatment will be dependent on the site use, but as a minimum it must include a sediment and litter trap. An oil and grease trap is to be included if there are oil and greases stored or used on site. Final polishing of stormwater through bioretention basins is recommended before release for larger sites. Stockpiles must not be located across stormwater flow paths. Permanent stockpiles should be contained within an enclosed structure unless otherwise approved by the Port.

The Port has also installed several litter baskets in drains along Archer Street, Hubert Street and Benwell Road to help capture sediment and litter from entering waterways. Where possible, proponents should install litter baskets on site stormwater systems to minimize litter/sediment leaving the site.

Slowing stormwater flows can reduce the volume of sediment and other contaminants being suspended and transported, while containing stormwater for a period can allow settling out. The release of water from the site must be controlled to prevent scouring and erosion.
Such controls include:

- rock check dams;
- designated draining areas;
- settlement ponds; and / or
- rock-lined discharge points.

The Proponent may also consider opportunities to collect and use stormwater on site, for example, for dust suppression or irrigation. Rainwater tanks should/must be installed on site to capture discharges from roofed areas for reuse in buildings and for irrigation.

The location of activities on site should consider stormwater flows, to prevent suspension of contaminants. Activities that should be managed in this way include:

- storage of hazardous materials (e.g. fuels, oils, paints, thinners, etc.);
- designated refuelling areas;
- washbays and cleaning areas;
- waste receptacles (including waste oils and chemicals); and
- stockpiling of materials.

Stormwater management design needs to comply with the SPP State interest - Water Quality. The SPP requires the Proponent to adopt the applicable stormwater management design objectives relevant to the climatic region (outlined in Tables A and B in Appendix 3 of the SPP) or demonstrate current best practice environmental management for development that is for an urban purpose.

<u>Option 1 – Design Objectives</u>
Pollutants should be removed from stormwater by using stormwater quality improvement devices (including but not limited to swales, bio-retention basins and filter strips) in the operational phase of the development. Table B in Appendix 3 of the SPP requires stormwater to be treated to the following levels:

- 80% reduction in Total Suspended Solids;

- 60% reduction in Total Phosphorus;
- 40% reduction in Total Nitrogen; and
- 90% reduction in Gross Pollutants.

Proponents are required to demonstrate through modelling (i.e. MUSIC software) that proposed stormwater treatment methodologies reduce pollutant loads from site by the above percentages. This modelling must meet the requirements of the SPP.

Option 2 – Best Practice (Offsite Stormwater Quality Investment Payment)
As an alternative (or, by negotiation, a combined) stormwater solution, there may be an option for Proponents to contribute to an offsite stormwater treatment strategy which delivers both financial and environmental benefits. In lieu of modelling and installing onsite stormwater treatment infrastructure that specifically targets sediment (for example bio-retention basins), a voluntary payment may be possible for offsite stormwater treatment. This initiative may also deliver comparative/overall infrastructure cost savings to many developments.

The potential for this option, including more specific details should be discussed with the Port's environmental specialists at pre-lodgment stage.

It should be noted that where this option is elected, developers will still be required to meet the targets for gross pollutants onsite in accordance with Option 1.

A stormwater management plan is prepared and certified by a suitably qualified professional (e.g. an RPEQ) and addresses the requirements of the Port and the advice in this document.

Stormwater Management Plan (SMP)
Where deemed to be a requirement for development by the Port, a SMP should be prepared by a suitably qualified RPEQ engineer and should demonstrate that the required stormwater quantity and quality objectives have been achieved. The SMP should comply with advice provided in this document, as well as the requirements outlined in QUDM and SPP. The SMP should illustrate the site's capacity to effectively manage stormwater, define the stormwater catchment area, the direction of stormwater runoff and include a design that demonstrates that no worsening of existing (i.e. pre-development) flow behavior is achieved in accordance with QUDM as well as achievement of the water quality objectives.

20.2.13. Erosion and Sediment Control

Erosion and sediment issues may arise where soils, sands and other earthen materials are left exposed (i.e. following excavations, site clearing, during stockpiling or preloading). Measures must be implemented to ensure that erosion is controlled, and that sediment is contained within the site and not released into the surrounding environment.

The following management measures should be considered to minimise erosion and sediment loss:

- maintaining natural ground cover as far as practicable;
- maintaining landscaping to an appropriate level;
- sediment fencing and/or site-bunding;
- silt socks at stormwater inlets (within the site only);
- sediment basins or rock check dams prior to discharge points;
- vehicle grids at site exits;
- regular street sweeping where sediment tracking occurs onto roadways; and
- weather/storm monitoring and appropriate action.

21. REFERENCES

Australian Standards
AS1170.2 – Structural design actions – Wind actions
AS1428 – Design Access and Mobility
AS1725 - Chain-link fabric security fencing and gates
AS1680.5:2012 Interior and workplace lighting
AS2312 – Guide to the protection of structural steel against atmospheric corrosion by the use of protective coatings
AS2832.1 – Cathodic protection of metals. Part 1: Pipes and cables
AS2890 – Parking facilities Off-street parking for people with disabilities
AS3666 – Air-handling and water systems of buildings – Microbial control
AS3798 – Guidelines on earthworks for commercial and residential developments
AS3962:2001 – Guidelines for the Design of Marinas
AS4024 Safety of machinery conveyors
AS4312 Atmospheric corrosivity zones in Australia
AS4671 – Steel for the reinforcement of concrete
AS4997:2005 - Guidelines for the Design of Maritime Structures

CRC for Water Sensitive Cities (2020), Ideas for Townsville: Greening the public realm in a dry tropics city. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities. https://watersensitivecities.org.au/wp-content/uploads/2020/07/Ideas-for-Townsville-v3-web.pdf

CTM (Cairns-Townsville-Mackay) Water Alliance Design and Construction Code

Dear, S-E., Ahern, C. R., O'Brien, L. E., Dobos, S. K., McElnea, A. E., Moore, N. G. & Watling, K. M., 2014. Queensland Acid Sulfate Soil Technical Manual: Soil Management Guidelines. Brisbane: Department of Science, Information Technology, Innovation and the Arts, Queensland Government. https://www.publications.qld.gov.au/dataset/acid-sulfate-soil-guidelines/resource/6d880993-4b80-45e3-9110-5c24fa7a7e75

Department of the Environment and Energy (Cth), 2020 National Light Pollution Guidelines for Wildlife https://www.awe.gov.au/environment/biodiversity/publications/national-light-pollution-guidelines-wildlife

Department of Environment and Science (DES) Operational Policy: Environmental Management of Firefighting Foam https://environment.des.qld.gov.au/__data/assets/pdf_file/0030/88662/firefighting-foam-policy.pdf

Department of Environment and Science (Qld), Model Operating conditions (Air) Port of Townsville ERA50 (1) Bulk Material Handling – Minerals https://environment.des.qld.gov.au/assets/documents/regulation/pr-co-bulk-handling-minerals-townsville.pdf

Department of Transport and Main Roads (Qld), 2019, Master Plan Priority Port of Townsville https://www.tmr.qld.gov.au/business-industry/Transport-sectors/Ports/Sustainable-port-development-and-operation/Master-planning-for-priority-ports/Master-planning-for-the-priority-Port-of-Townsville

Department of Transport and Main Roads (Qld), 2021, Queensland Manual of Uniform Traffic Control Devices https://www.tmr.qld.gov.au/business-industry/Technical-standards-publications/Manual-of-uniform-traffic-control-devices

National Construction Code (NCC) / Building Code of Australia (BCA) https://ncc.abcb.gov.au/editions-national-construction-code

National Environment Protection Council (Cth), 1999, National Environment Protection (Assessment of Site Contamination) Measure http://www.nepc.gov.au/nepms/assessment-site-contamination

Hammer, K., Rogers, B.C., Chandler, F. and Chesterfield, C. (2018). Vision and Transition Strategy for a Water Sensitive Townsville. Melbourne, Australia: Cooperative Research Centre for Water Sensitive Cities. https://watersensitivecities.org.au/content/vision-and-transition-strategy-for-a-water-sensitive-townsville/

PIANC (2002) Guidelines for the Design of Fendering Systems: 2002 https://www.pianc.org/publications/marcom/guidelines-for-the-design-of-fender-systems

PORT OF TOWNSVILLE
delivering sustainable prosperity

APPENDIX 1 - SUPPORTING INFORMATION GUIDANCE

The table below provides guidance for the items that should be addressed as part of investigations for the proposed development. It should be noted that the table is not intended to be an exhaustive list and Proponents are required to investigate and address all items that may be relevant to their development as outlined during pre-lodgement discussions.

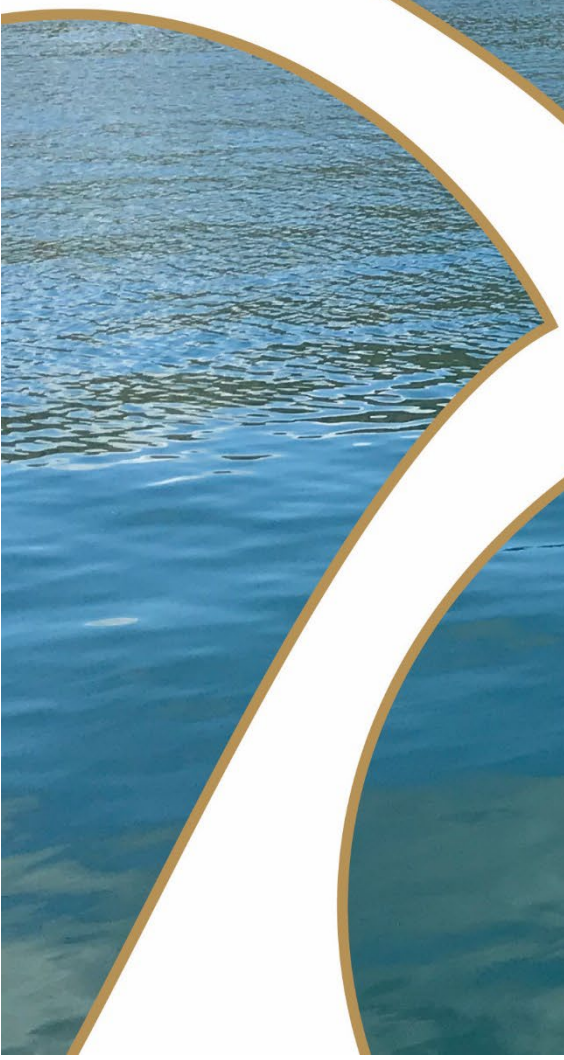
INVESTIGATION	DETAILED GUIDANCE
Concept Plans	a. Site layout plan indicating building layout and offsets to boundaries; b. Building (s) plan and elevation; c. Building foundation details (footing size and pile depths only); d. Details for dust and noise mitigation; e. Proposed site vehicle travel paths; f. Site utility loading (water, waste water and power); g. Site access and egress geometries;
Site Plan	a. Site operational plan (how site is proposed to be operated, including product/equipment entry and egress from site)
Geotechnical	a. Geotechnical report and analytical results used as the basis of design
Product handling	a. Product handling on wharf/vessels and on storage site (if relevant) b. Spill management and mitigation measures. Specific attention to berth housekeeping. c. Risk/hazard assessment of product during loading, transports and/or storage operations and mitigating controls.
Roads and Traffic Modelling and Impacts Assessment	a. quantifying transport operations given the existing configuration of port roads, intersections, security gates, rail spurs and level crossings; b. details about expected vehicle visitation to the site (i.e. details of maximum number of vehicles that will visit the site on a daily basis at the busiest/peak times as well as maximum annual number of vehicle movements for each vehicle type should be provided); c. the expected routes to be utilised for each component of freight / trucking operations; d. details about operating hours and the expected maximum number and frequency of vehicle movements for each vehicle type during every hour of a 24 hour day for each route to be utilised; e. the expected maximum annual number of vehicle movements for each vehicle type for each route to be utilised; f. vehicle type details including axle loading; g. the expected axle loadings and annual repetitions on proposed port internal routes; h. process for organising and marshalling vehicles on site; i. time taken to facilitate vehicle entry, processing and exit to/from site; j. details about traffic management infrastructure, vehicle booking systems and on-site traffic management that will accommodate the maximum number of vehicles that will be visiting the site at the busiest time; k. swept paths for each vehicle type on each intersection, facility entry /exit to be utilised and route/s to be used (including consideration of potential limiting horizontal road geometries along the routes); l. traffic modelling to confirm that the traffic generated by the site will not adversely impact the safe and efficient operation of the Port or the surrounding road network or increase the maintenance of the road network. m. confirmation that the operation will not necessitate vehicle queuing or parking outside the Proponent's leased area;

INVESTIGATION	DETAILED GUIDANCE
	n. Traffic management along the internal port routes with consideration of 2-way traffic interaction with other port users; and o. any other information considered suitable or required to detail impacts and demands on road network and rail network.
Environmental Assessment	a. Identification of all potential emissions and discharges to the environment, including solids, air, water (surface water and groundwater), noise and wastes (solids and liquids). For larger projects, estimate both flow rates and contaminant loads of emission streams where possible. b. Assessment of potential impacts on the receiving environment of these discharges and emissions. c. Details of any proposed flora and fauna removal required by the project and assessment of the environmental values of this flora and fauna and the impacts of the proposed disturbance. d. Details on the actions to be taken to minimise any adverse impacts of the development. e. The cumulative impact of the development in addition to existing Port developments will need to be evaluated by the proponent.
Air Quality Modelling and Assessment Report	a. Utilise the Port of Townsville's Whole of Port air model by an appropriately qualified person to model the predicted emissions to air and determine the impacts of the increase on air quality with specific consideration given to: a. The cumulative impacts of the increase; and b. The ambient air quality trigger values and limits identified in Table 2 – Ambient Air Quality Trigger Values and Limits and Table 3 – Dust Deposition Trigger Values and Limits. (from DES Port of Townsville Model air conditions). b. This must include berth operations, transport within the Port and any storage on Port land. c. Provide proposed control measures and demonstrate how these will effectively control air emissions from the operations to ensure that the boundary air quality objectives are met as a Whole of Port.
Noise Modelling and Assessment Report	a. utilise the Port of Townsville's Whole of Port Noise Model to assess the contribution of the proposed activity to the cumulative noise emissions from the Port; b. not only consider noise levels, but the frequencies and intrusiveness of the noise generated; and c. provide proposed noise control measures and demonstrate how these will effectively control noise emissions to achieve the acoustic quality objectives in the EPP (Noise) at the nearby sensitive receptors including but not limited to in South Townsville.
Stormwater/Flood Impact Assessment Report	a. Development impacts to be appropriately modelled utilising the Ports existing hydraulic model, or approved alternative model, to demonstrate no worsening flooding impacts from proposed development works. b. Expected discharge volumes to Port System c. Proposed testing and treatment solutions prior to discharge d. Proposed discharge location and preliminary design e. Given the life of the lease, consider impacts to the operation from climate change predicted sea level rise. f. Consideration of how the site can be water positive incorporating as much water reuse and recycling as possible.
Construction EMP	Address the requirements set out in the Sustainable Port Guidelines – Environmental Management Plan Guidelines

INVESTIGATION	DETAILED GUIDANCE
Operational EMP	Address the requirements set out in the Sustainable Port Guidelines – Environmental Management Plan Guidelines
Baseline Survey	Port requires that proponents undertake a contaminated land investigation prior to occupation of a new lease area (baseline assessment). The land investigation is to minimise any future liability to the lessee for site clean-up not caused by the lessee's activities. An exit contamination assessment (exit assessment) shall also be undertaken prior to departure from the lease. Any investigation undertaken should comply with relevant Queensland Contaminated Land Guidelines and the National Environment Protection (Assessment of Site Contamination) Measure 1999. Contaminants to be tested include, but not be limited to, heavy metals, PFAS (standard and TOPA), asbestos containing material (ACM) and hydrocarbons.

PORT OF TOWNSVILLE
delivering sustainable prosperity

APPENDIX 2 - ENVIRONMENTAL MANAGEMENT PLAN GUIDELINE



PURPOSE

This guideline is intended to assist Port operators and/or contractors identify the basic requirements that need to be considered when preparing Construction and Operational Environmental Management Plans (EMPs) for activities within the Port of Townsville.

The size, complexity and issues associated with the project will guide the requirements of the EMP. Straightforward small projects will require a simple document while larger projects, or those with specific environmental risks, will require a more comprehensive approach.

EMPs should be developed by experienced persons and it may be necessary to engage a consultant to assist in more complex matters. Depending on the nature of construction and operation of the proposed development, technical information may need to be provided. Specialised consultants may need to be engaged to prepare this information.

It is strongly suggested that the contractor engaged to perform the works is significantly involved in the development of the documents, particularly the Construction EMPs.

The Proponent is at all times solely responsible for the full and complete implementation of the Construction and/or Operational EMP. The Proponent will at all times be liable for all penalties, costs and expenses which may be incurred in respect of offences committed or alleged to have been committed under the provisions of any relevant Environmental Protection legislation.

The preferred style of document is a basic information source that can be readily accessed and understood by all employees. It should be as straightforward as possible and contain only information of direct relevance to the project.

It is recommended that anyone requiring or preparing an EMP consult with the Port's Environment specialists. This will allow timely assessment of the EMP and prevent submission of unnecessary information.

ENVIRONMENTALLY RELEVANT ACTIVITIES (ERAS)

Some proposed activities to be undertaken on port land may constitute an ERA as identified by Schedule 2 of Queensland's *Environmental Protection Regulation 2019*. It is the sole responsibility of the Proponent to investigate whether an application may be required for an ERA.

Where development involves an ERA, assessment and approval of the EMP will be undertaken by either DES or local council (for devolved ERAs) as part of the development approval process.

If an ERA is triggered a specific format may need to be followed for a submitted EMP. If this is the case, Proponents should follow the structured formatting required by DES or the local council for submission to the Port.

CONSTRUCTION EMPS

A Construction EMP is a practical and achievable plan to minimise environmental impacts during the construction phase by any personnel on site (including, but not limited to, the contractor and all sub-contractors).

The Construction EMP must be site specific and clearly state the measures that will be employed on the site to minimise any adverse environmental impact. All activities are expected to be undertaken in accordance with the relevant Federal, State and Local Government regulations.

Ideally, a site-specific Construction EMP will be submitted with the development application, however, where contractors have not been appointed at the time of submitting the development application, the

requirement for a Construction EMP will be a condition of the approval. In this case the document will need to be lodged at least two (2) weeks prior to the planned construction commencement date and approved prior to any works starting on the site.

No construction activities can commence on port lands until the Port has reviewed a Construction EMP.

The table below provides a checklist of issues which need to be addressed in a Construction EMP. It should be noted that the issues listed in the checklist are not intended to be an exhaustive list and Proponents are required to investigate and address all environmental issues that may be relevant to their development.

The Construction EMP is a dynamic document, which may be subject to change or modification as a result of site development, changes on the site, or occurrence of a non-compliant event. This allows better environmental outcomes to be achieved throughout the process. The Port needs to be consulted on any changes to an approved EMP.

Table 8: Information to be included in Construction EMPs

ITEM	DESCRIPTION	
1.0	**Introduction**	
1.1	Overview of the works	
1.2	Scope of the works	
1.3	Layout of the works (including the size and location of the site)	
1.4	Address and real property description of the site	
1.5	Details of the developer/contractor and any other key groups or individuals who may be associated with the works	
1.6	Proposed start and finish dates, and specification of an approximate date for any key events (e.g. material excavation begins)	
1.7	Details of the type and duration of the construction phase	
1.8	Number of personnel on site during construction and how office, toilet facilities and parking will be managed	
1.9	Hours of work	
1.10	Access to the site	
1.11	Details of the Environmental values of the nearby areas (e.g. Great Barrier Reef Port surrounded by Outstanding Universal Values)	
2.0	**Site Plan**	
2.1	Detail the location of developments on the site (buildings etc.)	
2.2	Detail the location of natural features (waterways, sensitive vegetation etc.)	
2.3	Detail environmental control measures (sediment and erosion controls etc.)	
2.4	Detail the location of stormwater infrastructure to be installed (e.g. pipe work, GPTs etc.)	
2.5	Detail access and egress location for vehicles (including control measures e.g. shakedown pads)	
2.6	Details as to review and update methodology of the site plan as work progresses	
2.7	Copy of Site Plan attached to the Construction EMP	
3.0	**Environmental Issues**	

ITEM	DESCRIPTION	
3.1	Stormwater management, including erosion and sediment control	
	Detailed plan showing the site layout and various erosion and sediment control devices	
	Detail stormwater discharge points	
	Detail stormwater retention and ponding areas with capacity and overflow points identified	
	Detail any up/down stream diversions from contaminated, storage and activity areas	
	Detail measures to manage run-off from cleaning, wash-down and servicing area with potential for contaminants to enter stormwater system	
	Detail installation and maintenance programs for stormwater control measures, such as oil separators, silt, rubbish traps, gross pollutant traps and stormwater diversion systems	
	Details of water quality and surface water runoff	
	Detail any wastewater recycling / re-use systems	
	Detail measures to prevent adverse effects on existing water quality	
3.3	Air quality management	
	Detail point emissions sources and their locations	
	Detail fugitive emission sources and their locations	
	Detail measures to be adopted to minimize air emissions from the project	
3.4	Noise management	
	Detail noise emissions sources and their locations	
	Detail measures to be adopted to minimize noise emissions from the project	
3.5	Land contamination	
	Details of storage of fuel and other hazardous goods	
	Details fueling and maintenance of vehicles and equipment	
	Detail emergency response (devices (e.g. spill kits etc.)	
3.6	Acid sulphate soil management (Management of acid sulphate soils is to be consistent with the Queensland Acid Sulphate Soil Technical Manual: Soil Management Guidelines).	
3.7	Groundwater	
	Details of activities that may affect groundwater	
	Detail measures to be adopted to minimize groundwater impacts	
3.8	Waste management	
	Disposal of waste (including fuel, oil, chemicals, points and sewage)	
	Litter and waste from construction phase to be regularly cleaned from the site and disposed of offsite in accordance with regulatory requirements and to the satisfaction of the Port	
	Litter and waste to be contained on-site prevented from escaping off the site into adjacent areas, neighbouring properties and waterways until disposed	
3.9	Light management	
	Detail nighttime operations and how light emissions will be managed to minimize impact to other Port Customers or wildlife	
3.10	Flora and fauna	
	Detail any (on / off site) proposed vegetation removal	

ITEM	DESCRIPTION	
	Detail the method of removal and measures for erosion and sedimentation control	
	Detail ongoing measures to avoid affecting (on / off site) vegetation	
3.11	Cultural heritage	
3.12	Biosecurity	
	Details any measures to minimize the spread of weeds or pests from the project	
4.0	**Project Management and Contacts**	
4.1	Detail the roles and responsibilities of the responsible employees (e.g. Project Manager, Site Superintendent, Project Engineer etc.) involved in the implementation of the Construction EMP	
4.2	Provide contact details for the responsible employees	
5.0	**Monitoring and Reporting**	
5.1	Detail the key elements to be monitored and reported on over the duration of the project	
5.2	Handling and reporting environmental incidents (i.e. Detail process for handling, recording and reporting environmental incidents)	
6.0	**Site Environment Induction**	
6.1	Detail site induction process and how it will be managed	
7.0	**Sustainability**	
7.1	Water consumption and conservation	
	Detail how much water will be used during the works and what water will be used for (e.g. dust suppression, compaction etc.)	
	Detail measures to reduce the consumption of potable water used and what alternate supplies to potable water can be used (e.g. recycled waters, marine water or harvested stormwater)	
	Detail measures to manage and monitor water usage and leaks	
7.2	Waste management	
	Details measures to minimise the generation of waste	
	Detail measures to facilitate recycling and reuse	
7.3	Energy management	
	Detail how much energy will be used during the works and what water will be used for (i.e. diesel and electricity)	
	Detail measures to manage the use and reduce the consumption of energy	
	Detail measures to reduce greenhouse gas emissions from construction vehicles and equipment	

OPERATIONAL EMPS

An Operational EMP is focussed on sound environmental management practices, which will be undertaken to minimise adverse impacts on the environment through normal operation of the facility. In addition, an Operational EMP identifies what measures will be in place or are actioned to manage any incidents and emergencies that may occur during operation of a facility.

The Operational EMP must clearly state the measures that will be employed on the site to minimise any adverse environmental impact. All activities are expected to be undertaken in accordance with the relevant Federal, State and Local Government regulations.

The Operational EMP must be reviewed every three (3) years and the Port needs to be consulted on any changes to the approved EMP. When reviewing, Proponents should ensure that the Operational EMP continues to comply with the Port's requirements as in place at the time of review.

Table 2 provides a checklist of issues which need to be addressed in an Operational EMP. It should be noted that the issues listed in the checklist are not intended to be an exhaustive list and Proponents are required to investigate and address all environmental issues that may be relevant to their operation.

Table 9: Information to be included in Operational EMPS

Item	Description	
1.0	**Introduction**	
1.1	Overview of the development	
1.2	Scope of the development (including stages of development)	
1.3	Details of activities and processes undertaken on site	
1.4	Details of the developer/contractor and any other key groups or individuals who may be associated with the development	
1.5	Address and real property description of the site	
1.6	Layout of the site (including the size and location of the site) and adjacent Port tenancies	
1.7	Details of the tenure agreement (e.g. term of lease) and any land owner consents or Development Approvals	
1.8	Details of any Environmentally Relevant Activities for the development and relevant Environmental Authorities	
1.9	Proposed start date and expected life of the project	
1.10	Number of personnel on site or associated with the development	
1.11	Hours of work	
1.12	Access to the site	
1.13	Detail an assessment of risks associated with the operation and measures that have been implemented to minimise the risks	
1.14	Details of the Environmental values of the site and nearby areas (e.g. Great Barrier Reef Port surrounded by Outstanding Universal Values)	
2.0	**Site Plan**	
2.1	Detail the location of buildings, structures, drains and other site features	
2.2	Detail the location of natural features (waterways, sensitive vegetation etc.)	
2.3	Detail environmental control measures (sediment and erosion controls etc.)	
2.4	Detail the location of stormwater infrastructure installed (e.g. pipe work, GPTs etc.)	
2.5	Detail access and egress location for vehicles (including control measures e.g. shakedown pads)	
2.6	Detail the location of all existing and proposed discharge and emission points to the environment, including where air, noise, liquids, wastewater, dust, smoke, vapours and any other contaminants are emitted	
2.7	Copy of Site Plan attached to the Operational EMP	
3.0	**Environmental Issues**	
3.1	Stormwater management, including erosion and sediment control	

Item	Description	
	Detailed plan showing the site layout and various erosion and sediment control devices	
	Detail stormwater discharge points	
	Detail stormwater retention and ponding areas with capacity and overflow points identified	
	Detail any up/down stream diversions from contaminated, storage and activity areas	
	Detail measures to manage run-off from cleaning, wash-down and servicing area with potential for contaminants to enter stormwater system	
	Detail installation and maintenance programs for stormwater control measures, such as oil separators, silt, rubbish traps, gross pollutant traps and stormwater diversion systems	
	Details of water quality and surface water runoff	
	Detail any wastewater recycling / re-use systems	
	Detail measures to prevent adverse effects on existing water quality	
3.3	Air quality management	
	Detail point emissions sources and their locations	
	Detail fugitive emission sources and their locations	
	Detail measures to be adopted to minimize air emissions from the project	
3.4	Noise management	
	Detail noise emissions sources and their locations	
	Detail measures to be adopted to minimize noise emissions from the project	
3.5	Land contamination	
	Details of storage of fuel and other hazardous goods	
	Details fueling and maintenance of vehicles and equipment	
	Detail emergency response (devices (e.g. spill kits etc.)	
3.6	Acid sulphate soil management (Management of acid sulphate soils is to be consistent with the Queensland Acid Sulphate Soil Technical Manual: Soil Management Guidelines).	
3.7	Groundwater	
	Details of activities that may affect groundwater	
	Detail measures to be adopted to minimize groundwater impacts	
3.8	Waste management	
	Disposal of waste (including fuel, oil, chemicals, points and sewage)	
	Litter and waste from construction phase to be regularly cleaned from the site and disposed of offsite in accordance with regulatory requirements and to the satisfaction of the Port	
	Litter and waste to be contained on-site prevented from escaping off the site into adjacent areas, neighbouring properties and waterways until disposed	
3.9	Light management	
	Detail nighttime operations and how light emissions will be managed to minimize impact to other Port Customers or wildlife	
3.10	Flora and fauna	
	Detail any (on / off site) proposed vegetation removal	
	Detail the method of removal and measures for erosion and sedimentation control	

Item	Description	
	Detail ongoing measures to avoid affecting (on / off site) vegetation	
	Detail any measures to minimize impacts to fauna (e.g. fauna friendly fencing)	
3.11	Cultural heritage	
3.12	Biosecurity	
	Details any measures to minimize the spread of weeds or pests from the project	
4.0	**Project Management and Contacts**	
4.1	Identify the people (and provide their contact details, including after hours) responsible for: implementation of and management of the Operational EMP; receiving the reports of monitoring, remedial action, environmental complaints and emergencies; ensuring that measures / action plans are implemented; verification, reporting and auditing of such measures / actions	
5.0	**Monitoring and Reporting**	
5.1	Detail measure to monitor the environmental aspects and/or effects resulting from the operation of the site	
5.2	Detail record keeping process for monitoring results	
6.0	**Environmental Complaints**	
6.1	Detail measures on how environmental complaints to the operation are managed	
7.0	**Environmental Incidents**	
7.1	Detail how environmental incidents are recorded and managed	
8.0	**Site Environment Induction**	
8.1	Detail site induction process and how it will be managed	
9.0	**Auditing**	
9.1	Detail the implementation of the Operational EMP and how it will be monitored for compliance	
9.2	Detail review process of the Operational EMP	
10.0	**Sustainability**	
10.1	Water consumption and conservation	
	Detail how much water will be used during the works and what water will be used for (e.g. dust suppression, compaction etc.)	
	Detail measures to reduce the consumption of potable water used and what alternate supplies to potable water can be used (e.g. recycled waters, marine water or harvested stormwater)	
	Detail measures to manage and monitor water usage and leaks	
10.2	Waste management	
	Details measures to minimise the generation of waste	
	Detail measures to facilitate recycling and reuse	
	Details of how the facility is adopting zero waste/circular economy principles	
10.3	Energy management	
	Detail how much energy will be used during the works and what water will be used for (i.e. diesel and electricity)	
	Detail measures to manage the use and reduce the consumption of energy	

Item	Description	
	Detail measures to reduce greenhouse gas emissions from construction vehicles and equipment	
	Detail any renewable energy used on site or future plans for renewable energy usage	
10.4	Details any other sustainability features adopted in the project (e.g. building design, equipment selection)	