



Development Guidelines

MA018

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I. Preamble

Southern Ports Authority, Port of Esperance is a c , Corporatised entity operating under the *Port Authorities Act 1999* (PAA), and oversees the operations of the Port of Esperance (PoE).

PoE's functions are defined by PAA (Section 30(1)) as:

- To facilitate trade within and through the port and plan for future growth and development of the port
- To undertake or arrange for activities that will encourage and facilitate the development of trade and commerce generally for the economic benefit of the State through the use of the port and related facilities
- To control business and other activities in the port or in connection with the operation of the port
- To be responsible for the safe, secure and efficient operation of the port
- To be responsible for the maintenance and preservation of vested property and other property held by it, and
- To protect the environment of the port and minimise the impact of port activities on that environment.

The Port is a Registered Mine Site and must comply with the Mines Safety and Inspection Act (MSIA) and Mine Safety and Inspection Regulations (MSIR).

II. Purpose

The Development Guidelines have been prepared to provide guidance to engineers, architects and other specialists in designing facilities and infrastructure for consideration by PoE. In addition, the Development Guidelines are intended to assist development applicants and proponents in preparing a Development Application that complies with the criteria set out within.

This document will improve the efficiency of the Development Application Process by making Development Applicants and Proponents aware of PoE requirements for gaining approval.

The Development Guidelines do not serve a statutory function. The Development Guidelines are to be read in conjunction with relevant Australian Standards and government agencies requirements together with other PoE development documents.

III. Scope

The Development Guidelines comprises of five (5) different sections, as follows:

- Section 1:** Provides an outline of the purpose of the Development Guidelines and provides an overview of the sites to which these guidelines apply.
- Section 2:** Details PoE's Development Approval Process, the required stages, the tasks that shall be carried out by the Proponent and the relevant documentation.
- Section 3:** Specifies the expected design criteria and standards for all drawings submitted to PoE by the Proponent.
- Section 4:** Specifies the expected design criteria and standards for land developments and

Section 5: Specifies the expected design and standards criteria for maritime developments.

IV. References

i. Internal References

- CAL618 Port Standards and Procedures
- MA020 Drafting Standards
- PL009 Environmental Management Plan
- PL010 Occupational Health and Safety Management Plan
- PL020 Emergency Response Plan
- PL032 Air Quality Monitoring Plan
- PL033 Asbestos Management Plan
- PL060 Storm water Management Plan
- PR049 Change Management Procedure
- PR080 Alcohol and Other Drugs Procedures, and
- PR142 Product Quality Management Procedure for Bulk Minerals

ii. External References

- Maritime Transport and Offshore Facilities Security Act, 2003
- Oil and Noxious Substances (POWBONS) Act, 1986
- Mines Safety and Inspection Act, 1994 (WA)
- Mine Safety and Inspection Regulations, 1995 (WA)
- Environmental Protection Act, 1986
- Pollution of Waters by Oil and Noxious Substances Act, 1987
- International Convention for the Prevention of Pollution from Ships, 1973
- Local Notice to Mariners 03/2010 – Esperance Port Wastewater Management Directive
- Biosecurity Act, 2012
- Ozone Protection and Synthetic Greenhouse Management Act, 1989
- NGER Act, 2007 NGERS Reporting
- Litter Act, 1997
- Contaminated Sites Act, 2003
- Sea Dumping Act, 1981
- Environment Protection and Biodiversity Act, 1999
- Water Agencies (Powers) Act, 1984, WEMP
- Rights in Water and Irrigation Act, 1914, and
- Fish Resources Management Act, (WA) and Fisheries Act, 1952

V. Definitions

Table 1 – Definitions

Term	Definition
Building	Any structure of associated appurtenance, whether fixed or moveable, temporary or permanent, placed or erected on the land.
Building Code of Australia	The Building Code of Australia (as amended).
Car park	Land or Buildings used primarily for parking vehicles whether open to the public or not.
Developer	A person or group of people undertaking development. An individual or company who combines raw land, roads, utilities, Buildings, and financing into a completed operating property.
Development	The development or use of Port controlled land or waters, including: <ul style="list-style-type: none"> • Any demolition, erection, construction, alteration of or addition to any building or structure on the land, and • The carrying out on Port land or seabed of any excavation, including dredging, filling or other works. Refer to Section 1.5 “Developments Covered by these Guidelines”
Development Application (DA) Process	The process described in Section 2 “Development Application Process”, ranging from pre-lodgement discussions with PoE to the decision by PoE of whether to approve the DA.
Development Plan	Plans which provide the schematic layout of proposed development and lot boundaries, which include local structure plans, outlines or comprehensive development plans and any other matters as may be required by PoE.
Good Condition	State of repair of infrastructure including buildings, roads, laydown areas or the like, required for it to be safely used for its intended purpose.
Infrastructure	Physical equipment or system, such as cables, pipelines, roads, railways, conveyors and pumps constructed, operated and maintained by a public authority or private sector body for the purposes of conveying, transmitting, receiving or processing water, sewerage, electricity, gas, drainage, communications, raw materials or other goods and services, but not including industry.
Landscaping or Landscape	Land developed with or by the planting of vegetation, the re-contouring or cut and fill of land, irrigation, placement of rocks, paving or laying of pathways and hard surfaces, creation of streams, wetlands and water features, including improved storm water drainage and which may include other fixtures such as outdoor recreation areas.

Term	Definition
Lease Agreement	Document signed by PoE (lessor) and a second party (lessee), which formalises the terms and conditions under which PoE allows the lessee to carry out port-related activities within a specified area under PoE's jurisdiction.
Lease Area	Portion of land under PoE's jurisdiction that has been let by PoE (lessor) to a second party (lessee) for the purpose of carrying out port-related activities under the conditions established in a Lease Agreement.
Lease Holder	<p>Head Lease Holder: Lessee or party which has a current Lease Agreement with PoE.</p> <p>Sub-Lease Holder: Third party which has a current lease agreement, which has been approved by PoE, with a Head Lease Holder.</p>
Proponent	With respect to a project: persons, bodies, authorities, governments, or donors that propose the project, are responsible for preparation of the project, including the environmental assessment, or are responsible for project implementation.
Temporary Structure	Any type of structure, whether transportable or not, which fulfils its designed purpose for a period of time no more than twelve (12) months.
Wash-down Facility	Land or buildings where vehicles or equipment are washed and cleaned.

Table 2 – Abbreviations

Abbreviation	Meaning
ABGR	Australian Building Greenhouse Rating
AHD	Australian Height Datum
AS	Australian Standard
BCA	Building Code of Australia
CEMP	Construction Environmental Management Plan
CSMP	Construction Safety Management Plan
DA	Development Application
DAFF Biosecurity	Department of Agriculture, Fisheries and Forestry (formally AQIS)
DART	Development Application Review Team
DER	Department of Environment Regulation
DIA	Department of Indigenous Affairs
DMP	Department of Mines and Petroleum
DWT	Dead Weight Tonnes
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
EMS	Environmental Management System
EPA	Environmental Protection Agency
EPS	Environmental Protection Statement
ERMP	Environmental Review and Management Program
DFES	Department of Fire and Emergency Services
HAT	Highest Astronomical Tide
HMP	Heritage Management Plan
LAT	Lowest Astronomical Tide
MRWA	Main Roads of Western Australia
MSDS	Material Safety Data Sheet
Mtpa	Million Tonnes Per Annum
MSIA	Mines Safety and Inspection Act

MSIR	Mine Safety and Inspection Regulations
OHSE	Occupational Health, Safety and Environment
OSMP	Operational Safety Management Plan
PER	Public Environmental Review
PAA	Port Authorities Act
PoE	Southern Ports Authority, Port of Esperance
QRH	Quick Release Hooks
SWMP	Storm water Management Plan
WC	Water Corporation

1. INTRODUCTION

1.1 Port of Esperance

The Port of Esperance (Port) is located on the north eastern side of Dempster Head and is the deepest port in southern Australia. The Port is sheltered from the south by a 1,200 metre long breakwater and is capable of handling Cape sized vessels up to 200,000 DWT. It is connected to the mining regions to the north by the Leonora-Esperance standard gauge railway line, which intersects the east-west transcontinental railway line at Kalgoorlie.

Iron ore has been exported through the Port since 1995. From small initial shipments of 1.5 Mtpa, iron ore exports have increased over the years and in 2013-14 PoE handled about 11.3 million tonnes of ore. In addition to the iron ore exported through Berth 3, the Port exports and imports a variety of commodities through Berths 1 and 2. Grain is the main bulk agricultural produce currently exported through Berth 1, along with wheat, barley and small amounts of canola and peas. Berth 2 is primarily used for the export of nickel products. Other bulk products are also imported through Berth 2 including petroleum, fertilisers and sulphur.

1.2 Southern Ports Authority, Port of Esperance

Southern Ports Authority, Port of Esperance (PoE) is a corporatised entity operating under the *Port Authorities Act 1999* (PAA), and oversees the operations of the Port.

PoE's functions are defined by PAA (Section 30(1)) as:

- To facilitate trade within and through the port and plan for future growth and development of the port
- To undertake or arrange for activities that will encourage and facilitate the development of trade and commerce generally for the economic benefit of the State through the use of the port and related facilities
- To control business and other activities in the port or in connection with the operation of the port
- To be responsible for the safe, secure and efficient operation of the port
- To be responsible for the maintenance and preservation of vested property and other property held by it, and
- To protect the environment of the port and minimise the impact of port activities on that environment.

1.3 Vision, Mission, Values and Objectives of PoE

PoE's vision is:

To be the preferred gateway Port to the Yilgarn and Goldfields-Esperance Regions of Western Australia.

The direction provided by the vision is reinforced by a clear statement of the Mission of PoE:

- Ensure the provision of services that are competitive, innovative and customer focused
- Work with our people and our partners to deliver economic growth to the region, and
- Operate in a socially responsible and sustainable manner.

PoE has an established set of Values that it applies to the operation of the Port and the achievement of its Vision. These Values are:

- Build long-term relationships with customers who share our Values
- Provide sustainable commercial returns to our shareholders
- Operate and compete in a global environment
- Operate in a commercial manner with competitive pricing and deliver sustainable returns
- Provide technical excellence and an environment of continuous improvement
- Deliver high standards of governance
- Communicate with stakeholders openly and honestly
- Develop an innovative and supportive logistics management capability, and
- Manage our environment responsibility by preserving the health of the water, land and air in which we operate.

PoE's Objectives align with its functions under the PAA and is set out below:

- To ensure that services are provided that are efficient and reliable, and meet the needs of Port users
- To ensure the provision and maintenance of Port facilities such as wharves and associated Infrastructure that meet user needs, and
- To promote the development of trade through the Port.

1.4 Port of Esperance Layout



1.5 Developments covered by these guidelines

The Development Guidelines will be reviewed and updated to reflect safety, health, and environment and quality management system improvements and to ensure the on-going suitability, adequacy and effectiveness of its contents.

This document covers any land or maritime development undertaken within PoE's jurisdiction.

Developments covered by these guidelines include, but are not limited to:

- a) Demolition of any existing Building or structure
- b) Erection of or construction of any new structure
- c) Alteration of/addition to any existing Building or structure
- d) Earthworks, fill and land excavations (including those that involve changing the finished land level)
- e) Dredging works, including placement of spoil
- f) Increasing the extent of laydown areas
- g) Any activity that results in an increase in traffic volume of more than 5%, and
- h) Improvement of capacity or performance of existing structure or plant.

1.6 Disclaimer

The information contained in this handbook is believed to be correct at the time of issue. However, PoE does not guarantee the accuracy of the information and accepts no liability for any damage, delay or loss resulting from any such inaccuracy.

Whilst all care is taken to ensure that the information herein is up to date, it remains the responsibility of the Development Applicant or Proponent to ensure compliance with the latest standards and agencies requirements.

For more recent information, please contact the individual PoE personnel as indicated on www.southernports.com.au.

It is important to note again that this document is not a statutory document, but rather a set of guidelines, developed by PoE to streamline the DA Process and to ensure:

- Developments within the Port meets a consistent high level, and
- Proponents are aware of PoE requirements so Development Applications can be assessed quickly and efficiently, saving resources of both the Proponent and PoE.

1.7 Assistance and Feedback

These guidelines have been written to assist Development Applicants and Proponents in preparing and managing development applications. Development Applicants and Proponents are encouraged to contact PoE for assistance during the DA process. PoE also welcomes and appreciates your feedback. Please do not

hesitate to contact PoE using the details below.

Project Management Office

Telephone: (08) 9072 3333

Fax: (08) 9071 1312

Postal Address: Southern Ports Authority, Port of Esperance
PO Box 35
Esperance WA 6450

PoE can provide contacts within other government departments or agencies to confirm what information and/or approvals needed to successfully complete a Development Application.

1.8 PoE General Enquiries Contact Details

Telephone: (08) 9072 3333

Fax: (08) 9071 1312

Email: enquiries.esperance@southernports.com.au

Web: www.southernports.com.au

Physical Address: Corner The Esplanade and Bower Avenue
Esperance WA

Postal Address: Southern Ports Authority, Port of Esperance
PO Box 35
Esperance WA 6450

1.9 Master planning

Developments undertaken within the Port land and waters are to be consistent with the future development plans of the Port.

1.10 Addressing Heritage Constraints

An aboriginal burial place, Tommy Windich's grave, is located South of Iron Ore Shed 1, near the south western boundary of the Port along Hughes Road (see Section 1.4). Information about this heritage site is also available in the PoE Environmental Plan.

1.11 Sustainable Development

The Development Guidelines do not currently require developments to meet formal energy efficiency ratings such as Infrastructure Sustainability Rating implemented by the Australian Green Infrastructure Council (AGIC). However PoE encourages Development Applicants and Proponents to engage design consultants who utilise sustainable design principles wherever possible. In addition, consideration of developing Buildings with architectural merit which capitalise on the Port's unique setting is strongly encouraged.

1.12 Agencies and Regulatory Bodies Liaison

Depending on the complexity of a development, PoE requires the Development Applicant and Proponent to obtain approval from different agencies and regulatory bodies. The Development Applicant and Proponent shall liaise directly with the respective regulatory body and submit to the PoE the written approvals that have been obtained.

Examples of agencies and regulatory bodies that PoE may refer to in the DA are detailed below:

Table 3 – Agencies and Regulatory liaisons examples

Agency or Regulatory Body	Type of Approval Required
1. Shire of Esperance (SoE)	Building licence approval, unless otherwise advised by the SoE.
2. Department of Fire and Emergency Services	Fire hydrants and other required firefighting resources are provided in accordance with DFES requirements.
3. Water Corporation (WC)	WC Development Approval must be obtained if water supply is required from existing water pipes or if the installation of new pipes and water meter is required. All works must be done in accordance with the WC Water Supply Reticulation Manual. For further information, refer to www.watercorporation.com.au .
4. Department of Agriculture, Fisheries and Forestry (DAFF)	Formerly known as AQIS, DAFF are responsible for Australia's biosecurity system. DAFF provides import and export inspection and certification services to help retain Australia's highly favourable animal, plant and human health status and wide access to overseas export markets.
5. Department of Mines and Petroleum (DMP)	New High Voltage cable feeds required in the Port area shall only be located in defined service corridors with the approval of both PoE and the Department of Mines and Petroleum. Electrical service installations shall be in accordance with all applicable Australian Standards and other Regulatory Authorities requirements.

Agency or Regulatory Body	Type of Approval Required
6. Department of Mines and Petroleum (DMP)	Licence for storage and handling of Dangerous Goods.
7. Department of Environmental Regulation	<ul style="list-style-type: none"> • A Works Approval and License Amendment (Part V of Environmental Protection Act, 1986) may be required • A land clearing permit may also be required (Environmental Protection -Clearing of Native Vegetation) Regulations 2004. <p>The DER website provides guidelines for Works Approvals and clearing permits and exemptions and regulations for clearing native vegetation: www.dec.wa.gov.au.</p>
8. Department of Indigenous Affairs (DIA)	<p>Approval to relocate or disturb Aboriginal Heritage Sites via Section 18 under the Aboriginal Heritage Act. It is the Proponent's responsibility to arrange for all surveys, liaison and consultation as well as to obtain all necessary approvals</p> <p>Associated with the development. The DIA website provides guidelines and advice for Developers: www.dia.wa.gov.au.</p>
9. Environmental Protection Authority (EPA)	<p>Developments which fit into Type 2 or Type 3 categories may require referral to the EPA in order to assess any significant or potential environmental impacts during construction and / or operation of the development. The EPA will determine the level of assessment required for the proposal. Further information concerning referral of proposals and environmental impact assessment can be obtained from the EPA website:</p> <p>www.epa.wa.gov.au.</p>

1.13 Community Consultation

The Port's activities are conducted in close proximity to the surrounding community. It is critical to the Port's continued development that proponents conduct community consultation to maintain its 'social licence'. This consultation should be conducted before the development approval application is lodged with the PoE. This consultation is particularly required if the project represents a significant change of activity and additional risk to the community, such as the commencement of handling a new bulk product.

The Port's minimum requirement for consultation is for the proponent to present to the Port Consultative Committee (PCC). The PCC members represent community groups, businesses, and staff of regulatory bodies in Esperance. These members include both active environmental groups in Esperance, Local Environmental Action Forum and Locals for Esperance Development. Larger developments use the PCC as a sounding board to inform their plans including further consultation. This may include presenting the project in an open community forum, and providing information in the local newspaper and/or radio.

2. DEVELOPMENT APPROVAL (DA) PROCESS

All developments intended to be undertaken within PoE's jurisdiction must be approved by PoE through a DA Process, prior to the commencement of works.

If the Development is proposed and carried out by a sub-lease holder or sub-tenant, the Head Lease Holder must submit the DA to PoE. It is the responsibility of the Head Lease Holder to ensure that its sub-lease holder or sub-tenant complies with the any conditions attached to the DA approval.

Types of Development

Table 4 – Types of Development

Type of Development	Definition
Type 1	<ul style="list-style-type: none"> Uncomplicated minor Developments that have the potential to create low risk to future development, the environment or Port's safety Estimated Development cost of less than AUD\$1M For example: small Building extensions, site enhancements, Developments that involve minimal site and/or no heritage disturbance.
Type 2	<ul style="list-style-type: none"> Relatively uncomplicated Developments that have the potential to create low to medium risk to future development, the environment, heritage sites or Port's safety. Estimated development cost between AUD\$1M and AUD\$5M. For example: a major change of use to an existing Development, and new Developments involving medium amounts of construction and earthworks.
Type 3	<ul style="list-style-type: none"> Complex Developments that have the potential to create significant impacts to future Development, the environment or Port's safety. Would require assessment by other State or Commonwealth regulatory authority. Estimated Development cost of more than AUD\$5M. For example: buildings, bulk storage developments, dredging, railway terminal, iron ore handling developments and Developments involving large amounts of construction and earthworks. Generally, these Developments will require input from experienced specialist consultants in various technical areas and may require Board approval.

2.2 Development Application Fee

In order to cover the costs incurred by PoE in processing and assessing the submitted DA, a Fee (DA Fee) will be charged for each DA, whether or not the Development proceeds.

The DA Fee is comprised of fixed and variable cost:

- Fixed cost: represents the administrative costs incurred by PoE.
- Variable cost represents the cost of any external specialist resource that PoE may use for assessing the DA as well as the costs of monitoring of

works and project management. Variable costs will depend on the complexity of the Development Application. Proponents will be advised by PoE as a part of the DA Process.

Detailed DA Fee information can be obtained from the Application for Development Approval Form available on the PoE website www.southernports.com.au.

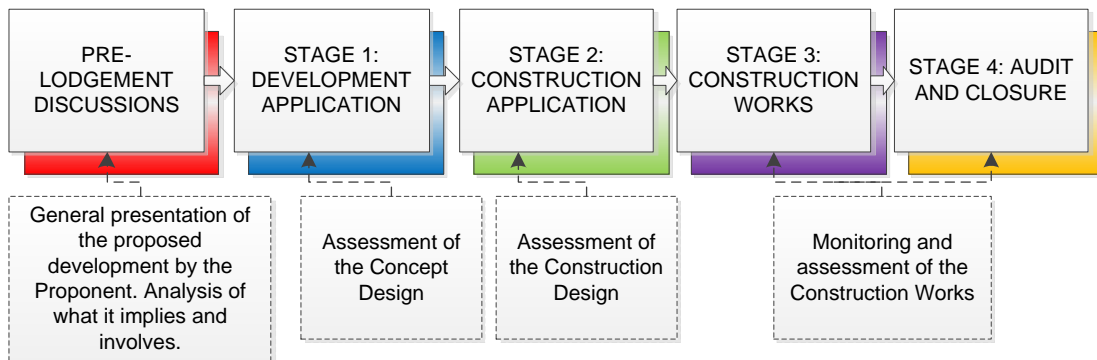
2.3 Development Application Process

2.3.1. DA Process Stages

The DA Process is divided into a number of stages, as depicted in Figure 1 below (Stages). Each Stage reflects the increasing certainty of the project details, including design, approvals and timings. Agreed Project Development schedules will define specific timeframes.

A comprehensive description of the documents required by both the Development Applicant and Proponent and POE for each Stage is outlined in this section.

Figure 1 - Stages in the Development Application Process



2.3.2. DA Process Overview

Figure 2 - Stage 1 Development Application process overview (Indicative Only)

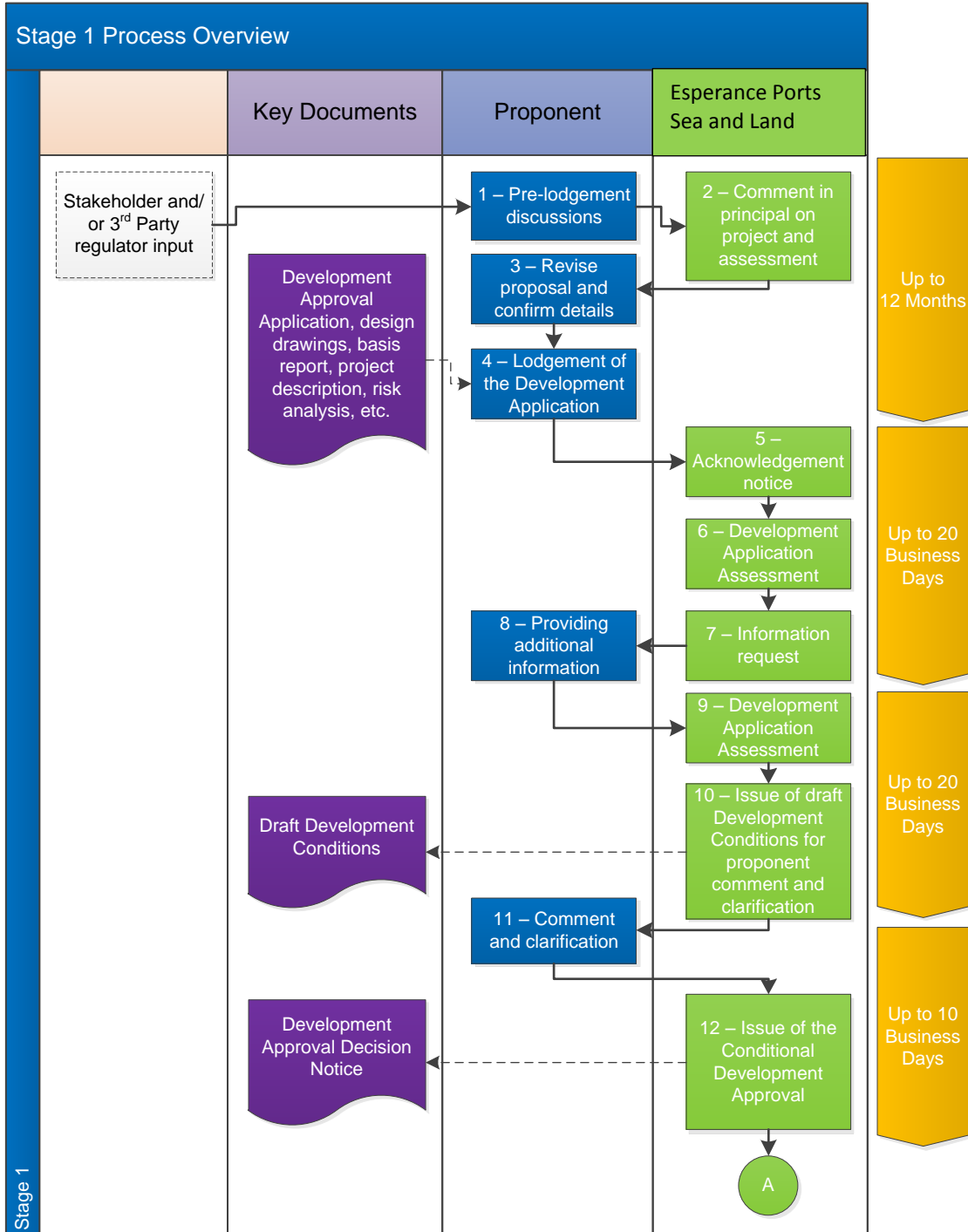


Figure 3 - Stage 2 Construction Application process overview

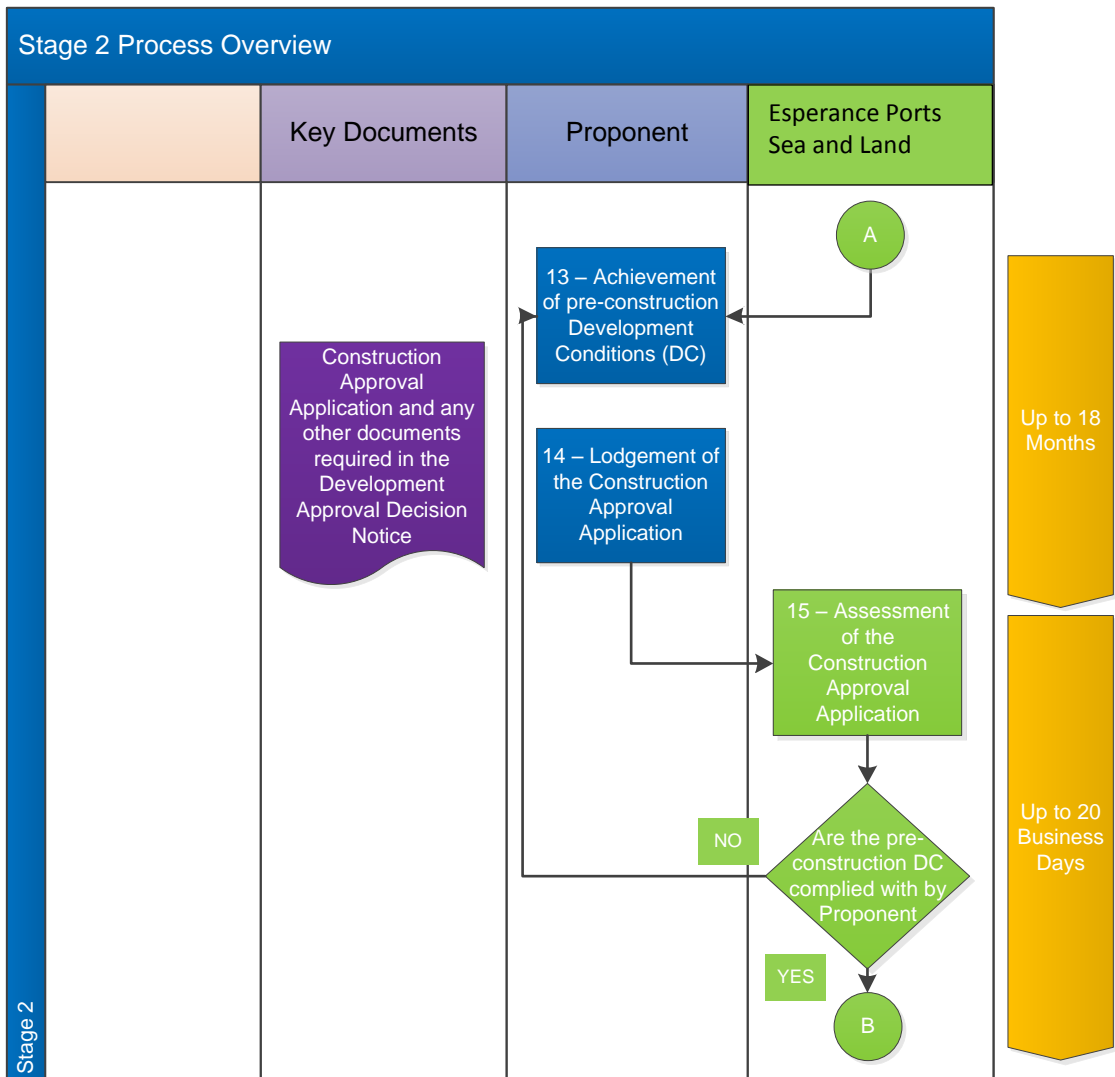


Figure 4 - Stage 3 Construction Works process overview

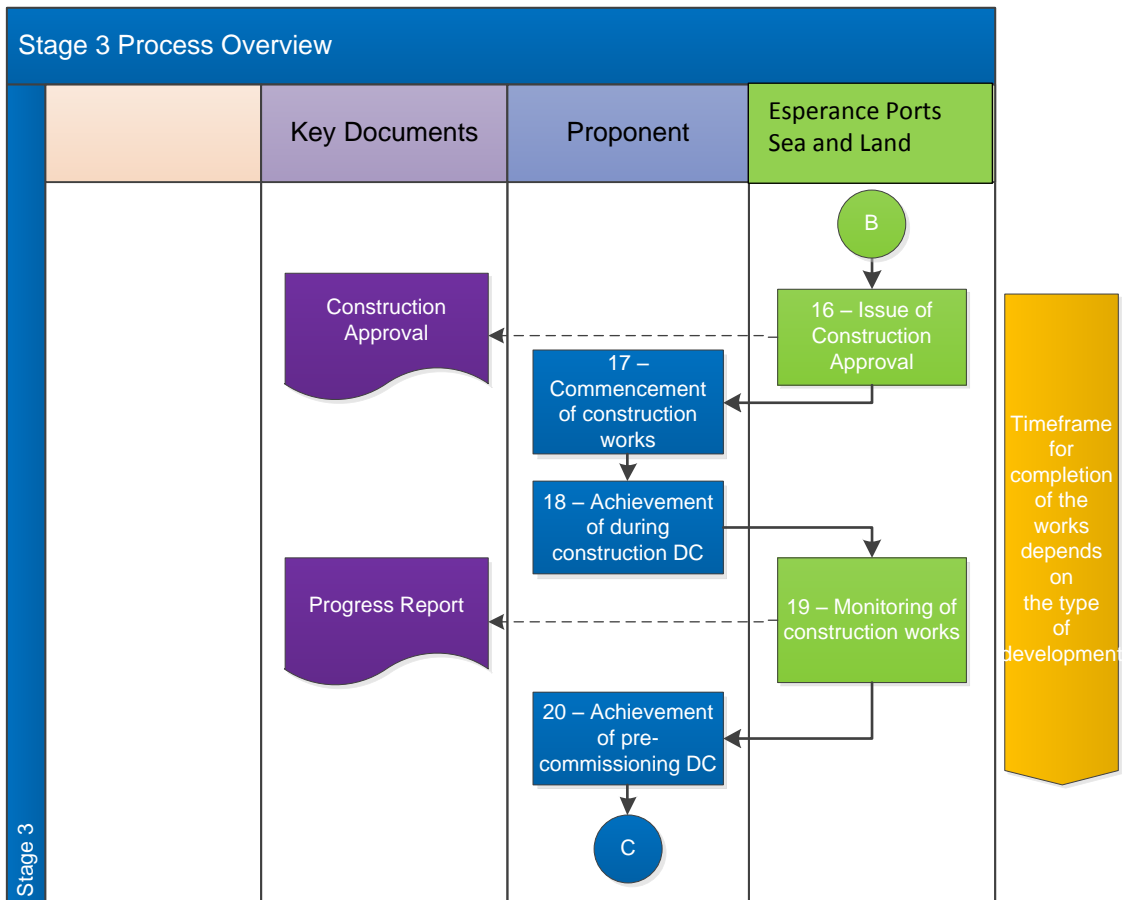
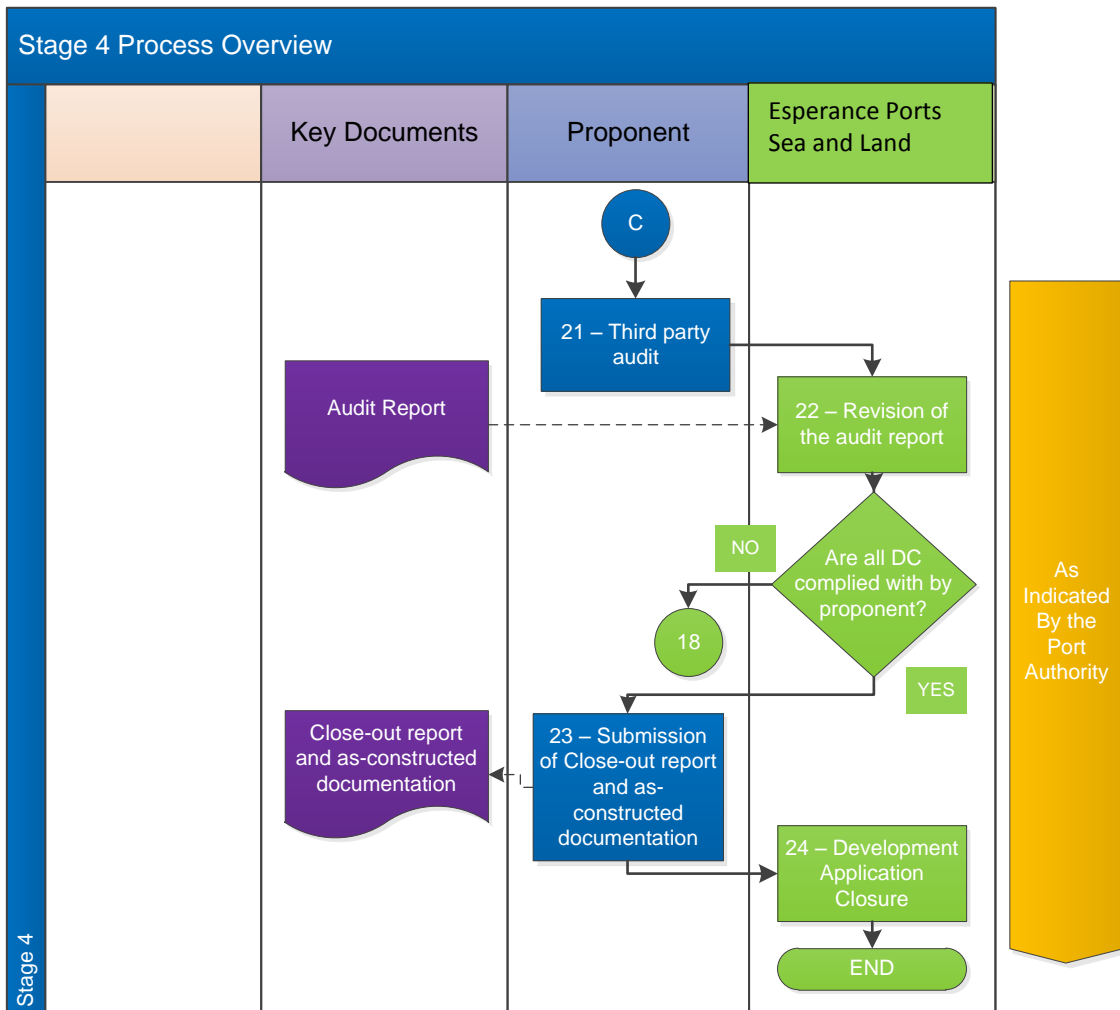


Figure 5 - Stage 4 Audit and Closure process overview



Development Application Submission

All DAs should be addressed to:

Chief Operating Officer or Delegate

Telephone: (08) 9072 3333

Fax: (08) 9071 1312

Email: enquiries.esperance@southernports.com.au

Upon receipt of a DA, PoE:

- Will acknowledge receipt of the DA.
- Advise Development Applicant or Proponents of the responsible PoE officer who will manage the DA Process and be the primary point of contact for the Development Applicant or Proponent (PoE Officer).
- Suggest an approximate timeframe for the assessment of the DA, and

- This PoE Officer will be the primary contact for the Development Applicant or Proponent.

Required Documentation

The documentation required to be submitted in each Stage will depend on the type and complexity of the Development. The following serves as a guide to the documentation required for various types of Developments.

Figure 6 – Type 1 Development: DA documents required

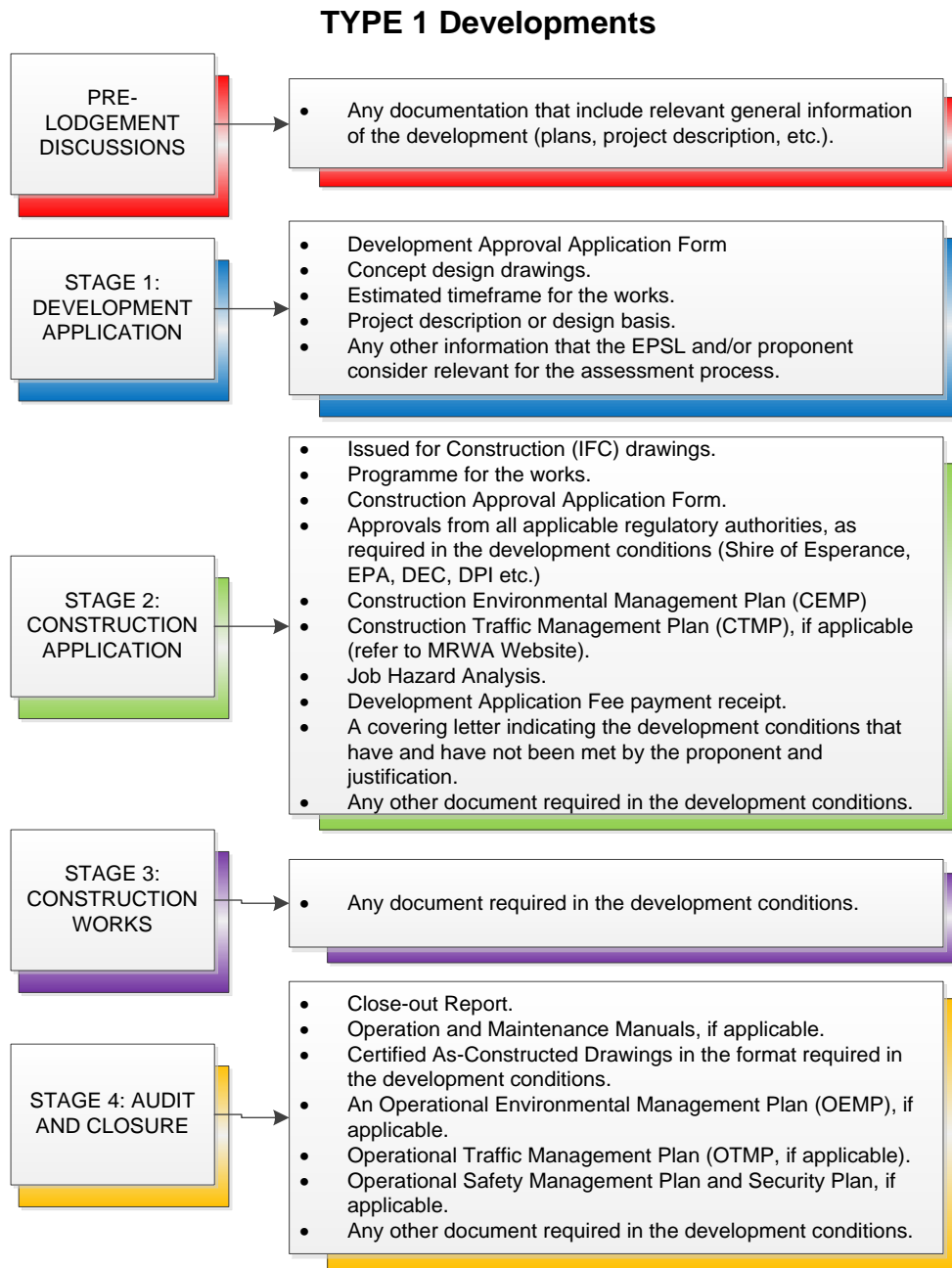


Figure 7 – Type 2 Development: DA documents required

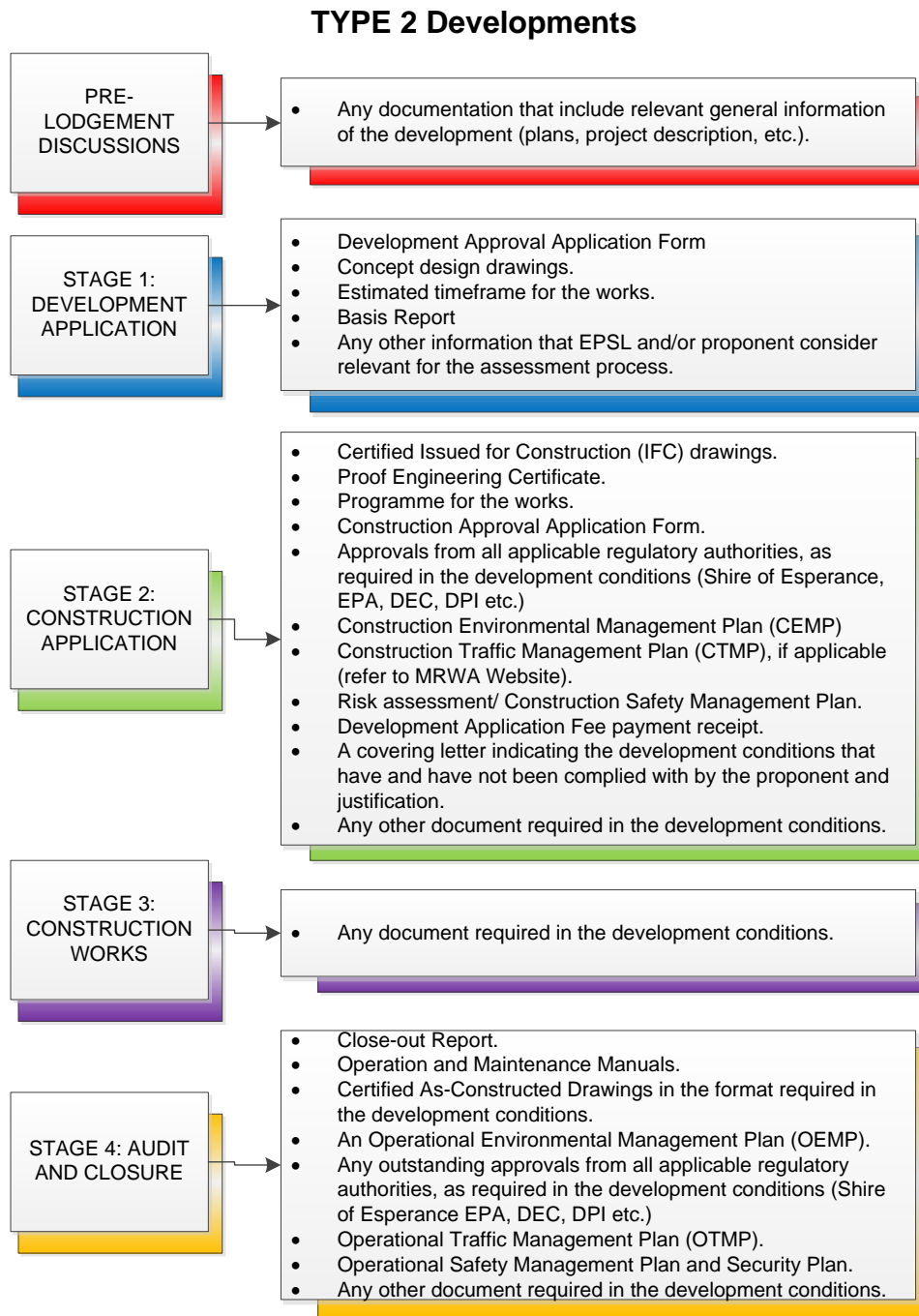
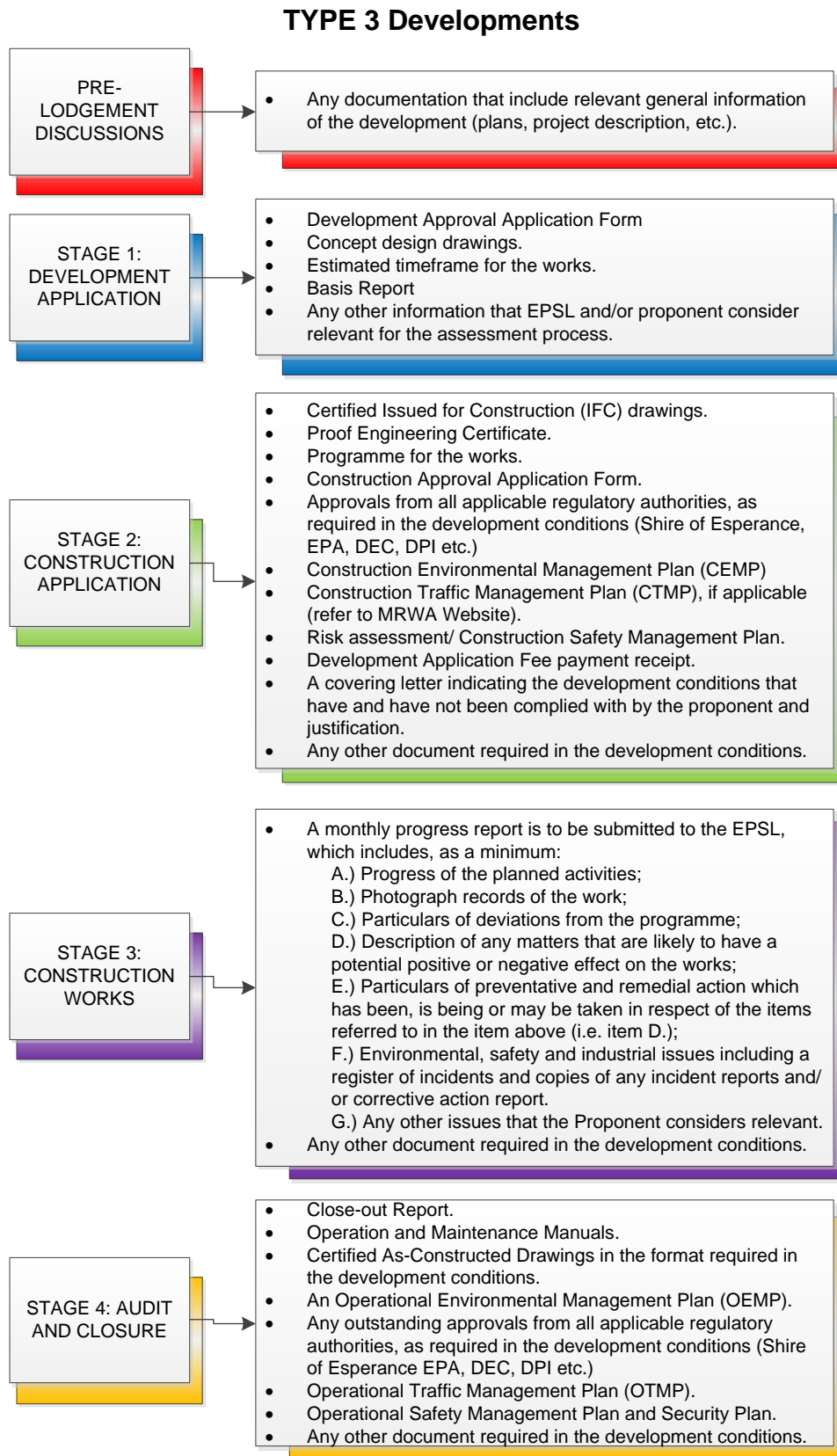


Figure 8 – Type 3 Development: DA documents required



Design Specifications

The detail of design specifications for Type 2 and 3 Developments will depend on the complexity of the Development. Design specifications may also be required for Type 1 Developments.

PoE encourages Development Applicants and Proponents to prepare a “Design Basis Report”, prior to preparation of design specifications as a basis for discussion and agreement with PoE. A design specification shall include the following titles as a minimum:

- Scope of work
- Design basis (for design and construct works only)
- Design certification (for design and construct works only)
- As-constructed documentation
- Material specifications, and
- Various disciplines applicable to the project, each with a separate heading (e.g. electrical, fire, potable water, roadwork, concrete).

Where relevant, design specifications will reference appropriate Australian Standards and BCA clauses.

Lengthy and wordy design specifications are discouraged by PoE.

Refer to Section 3 “Drawings Criteria and Standards” of this document for more information on drawings criteria and standards.

2.4 DA Assessment Process

Assessment by PoE at each Stage is necessary in order to ensure compliance with the standards and consistency of the DA Process.

Pre-lodgement Discussions

PoE encourages pre-lodgement discussions as early as possible in the DA Process. This will allow PoE to outline any issues with the Development, information requirements and provide existing information held by PoE to assist the Development Applicant and Proponent during the DA Process as required.

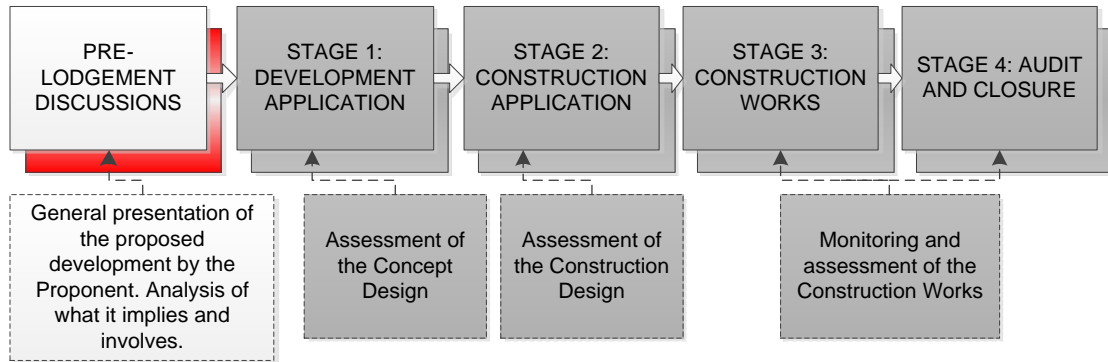
PoE has established a Development Application Review Team (DART) that may consist of the following members:

- Chief Operating Officer
- Commercial Manager
- Environmental Manager
- General Manager Operations
- Harbour Master, and
- Project Management Office

All Development Applicant and Proponent questions must be directed through the assigned PoE Officer.

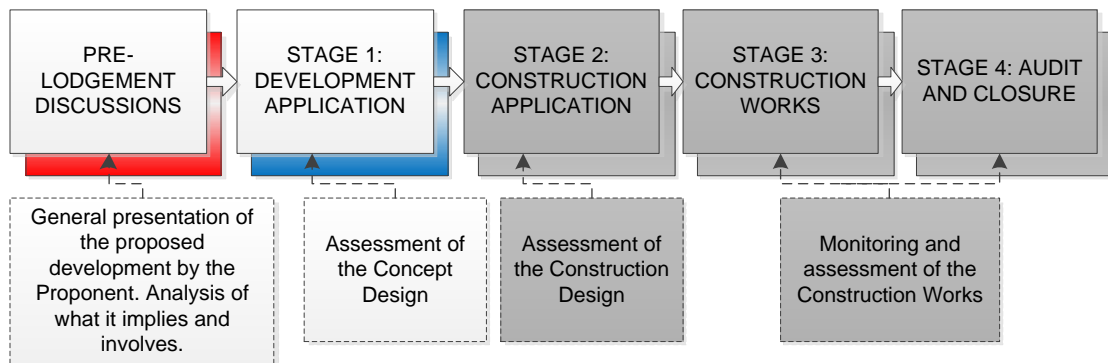
Following review by the DART, the project should at a minimum be presented at the Port Consultative Committee, and as discussed in Section 1.1.3, may require further consultation dependent on the project’s likely risk or interest to the local community.

Figure 9 – DA Assessment: Pre-lodgement Discussions



Stage 1

Figure 10 – DA Assessment: Stage 1



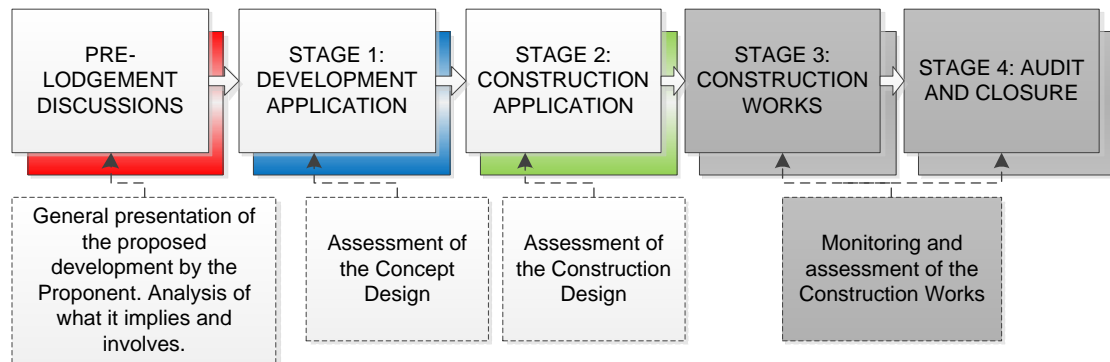
Stage 2

Prior to the commencement of construction works, the Development Applicant and Proponent are required to submit a Construction Approval Application along with required documentation.

- Construction Approval can only be issued by PoE’s Chief Operating Officer when all the preconstruction development conditions are met by the Proponent.
- The Construction Approval Application will be assessed by the PoE Officer managing the DA based on the preconstruction development conditions established by PoE in Stage 1 as well as any issues resulting from a third party engineering review.

- PoE will inform the Development Applicant and Proponent of any additional costs associated with the consultancy service that may be required at this stage to assess the Construction Approval Application.
- PoE will provide copies of documentation generated during the procurement process, if required by the Development Applicant and Proponent.
- Development Applicant will provide all OHS documentation, including Traffic Management Plans and Safety Management Plans, for review.
- The PoE Officer managing the DA may consult the DART when assessing the Construction Approval Application. Particularly if compliance with a development condition by the Development Applicant and Proponent needs to be given further consideration, additional review or special approval is required, or if there is any variation from the conceptual design (refer to Section 0 “Changes to the Approved DA”).

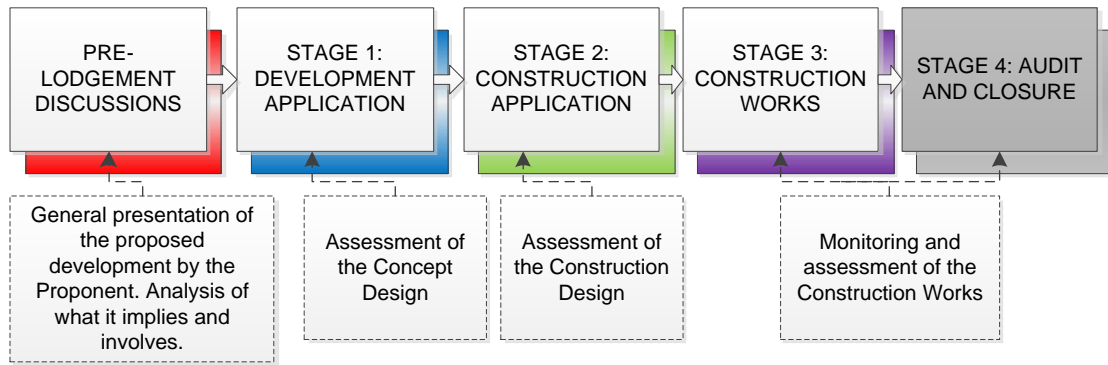
Figure 11 – DA Assessment: Stage 2



Stage 3

- The PoE Officer managing the DA will monitor the progress of the construction works, review the progress reports that the Development Applicant and Proponent has submitted to PoE during this stage and keep photographic records, if applicable.
- PoE’s Environment Department will also audit compliance with the Construction Environmental Management Plan during the development.
- The Safety and Security teams will audit the implementation of the safety and security plans onsite.
- The PoE Officer managing the DA may consult the DART at this stage, should any issue arise that need further consideration, additional review or special approval.
- PoE encourage Developments Applicants and Proponents to maintain constant communication and close liaison with PoE during the construction works. PoE is willing to reasonably assist Development Applicants and Proponents should issues arise during construction.

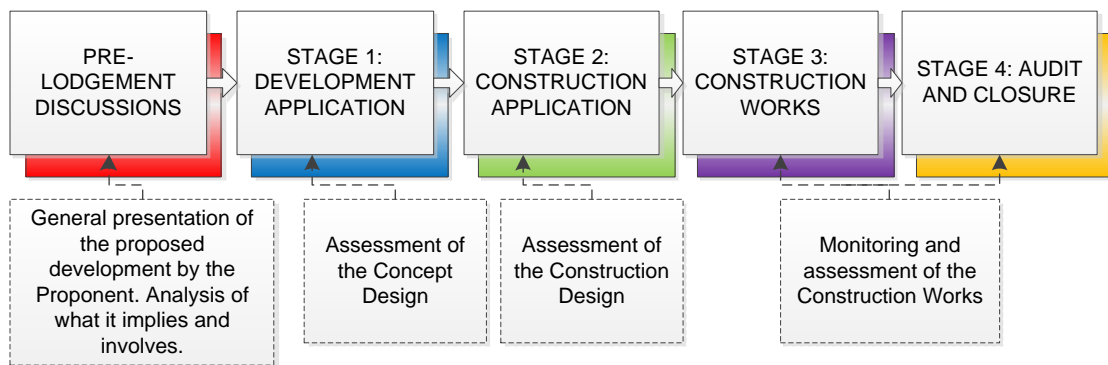
Figure 12 – DA Assessment: Stage 3



Stage 4

- Development Applicants and Proponents may be required to engage a third party auditor to undertake an audit at completion of works, depending on the complexity of the Development and the level of involvement. This requirement is at the discretion of PoE.
- In the event a third party audit is required the PoE Officer managing the DA will review the audit report and direct the Development Applicant and Proponent to promptly address any identified areas of non-conformance.
- At any time, PoE can audit the Development to ensure compliance with the development conditions.
- The PoE Officer will also receive all as-constructed documentation (drawings, operational and maintenance manuals, etc.) and any other document required in the development conditions.

Figure 13 – DA Assessment: Stage 4



2.5 Changes to the Approved DA

Changes to the approved DA resulting from the conceptual layouts, design or construction works should be submitted to PoE for verification (in the case of legitimate external approval authorities)/approval prior to undertaking such changes. If changes do not satisfy the development conditions or are not consistent with the basis on which the DA Assessment was carried out by the DART, PoE may withhold approval to proceed with the Development until the issue is satisfactorily addressed by the Development Applicant and Proponent.

PoE may require a revised DA to be submitted in the event of changes.

This section highlights the value of close liaison and pre-lodgement discussions with PoE during the process. Sound liaison allows PoE to gain a full understanding of the reason for changes and consequently the ability to assist the DA assessment and decision making process.

3. DRAWINGS CRITERIA AND STANDARDS

Conceptual, construction and as-constructed drawings are important components when assessing development and construction applications. The Development Applicant and Proponent must ensure that all drawings submitted to PoE for approval are in accordance with the requirements described below.

The level of details shown in the drawings will depend on the complexity of the Development.

Drawings are to be prepared in accordance with PoE Drafting Standards. The drawing system as outlined in the PoE document is intended mainly for internal documents and as a general guide for external users.

PoE can assist in this process by providing the Development Applicant and Proponent with existing information (where available), such as recent aerial photography for development overlays.

Table 5 – Performance criteria: drawings

Criteria	Minimum Standard
<p>a) Concept design drawings shall be submitted as supporting documentation of a DA and shall capture as much information as possible related to the Development, so as to facilitate its assessment by PoE</p>	<p>Concept design drawings are to contain the following general information, as a minimum:</p> <ul style="list-style-type: none"> • Company Name and contact details • Drawing number and date • Revision number and revision details • Drawing scale, scale bar and north arrow • Details of the horizontal & vertical datum, and • Drawing status (“Concept Only”, “Preliminary”, “Design”, etc.).
<p>b) Issued for Construction (IFC) drawings shall be submitted as supporting documentation of a Construction Approval Application and shall capture all information related to the construction issues, so as to facilitate its assessment by PoE</p>	<p>IFC drawings are to contain the following general information, as a minimum:</p> <ul style="list-style-type: none"> • Company Name and contact details • Registered Professional Engineer full name • signature and registration number • Drawing number and date • Revision number and revision details • Drawing scale, scale bar and north arrow • Details of the horizontal and vertical datum, and • Drawing status (“Issued for Construction”) <p>In addition to the above, IFC drawings shall contain specific information, including:</p> <ul style="list-style-type: none"> • Site Works: <ul style="list-style-type: none"> - Earthworks (including cut and fill volumes) - Locations and heights of stabilised embankments including gradient - Retaining walls

Criteria	Minimum Standard
	<ul style="list-style-type: none"> - Existing storm water drains, culverts, oil / silt removal catch pits - Pavement details and design or other surface finishes including falls and gradients - Identification and size of uses for all areas e.g., storage, loading, trade display, parking. - Location and dimensions of areas to be provided for the loading and unloading of vehicles carrying goods or commodities to and from the site. - Fencing: type, location and height. - Areas of open space, landscaping and screen planting, including materials, plant species, irrigation and irrigation plans. - Vegetation to be removed. - Buildings and structures to be installed - Any other item or infrastructure that needs to be relocated or removed. • Road works <ul style="list-style-type: none"> - Plans and profile. - Cross sections and grades. - Verge and road features. - Streets, locations and names. - Pedestrian access. - Road compaction tolerances. - Subsoil drainage. - Trenching plan. - Existing structures. - Road signage and furniture. • Electrical and Communications <ul style="list-style-type: none"> - Location and plan of all existing and future communications pits and conduit galleries. - Location plans of electrical and services outlets. - Line diagrams. - Trench details. • Drainage <ul style="list-style-type: none"> - Drainage Plan for site showing catchments areas, directions and volumes of design flow - Culvert sections and design - Sediment and pollution traps - Existing storm water drains • Signage and Line Marking <ul style="list-style-type: none"> - Signage Plan showing location of traffic, safety, legislative and lease signs - Footing Plan and sign heights - Signage Layouts for all non-standard signs (such as any advertising) - Line Marking Plan for all areas including car parks.

Criteria	Minimum Standard
<p>c) Drawings shall be prepared in compliance with applicable Australian Standards (AS) and PoE requirements</p>	<ul style="list-style-type: none"> - Roadways and turnarounds. • Drawings must comply with: <ul style="list-style-type: none"> - AS 1100 Part 101: Technical Drawing – General Principles - AS 1100 Part 401: Technical Drawing – Engineering Survey and Engineering Survey Design Drawing, and - POE’s Drawing Procedure. • IFC and As-Constructed drawings for Type 2 and 3 Developments are certified by a NPER registered professional engineer. • At completion of the construction works and within a timeframe determined by POE in the development conditions, the developer shall provide PoE with a full set of As-Constructed drawings in A3 sized hard copies and digital PDF and Auto Cad formats. These drawings shall be in a reproducible form, clearly marked: “As-constructed” and signed by the NPER registered professional engineer. • As-Constructed drawings in A1 sized hard copies may be required by PoE, at PoE’s discretion. • Allotment boundary drawings shall be certified by a Licensed Surveyor in accordance with Department of Regional Development and Lands and Landgate requirements.
<p>d) Engineering Certificate is prepared by a third independent party and is submitted to PoE</p>	<ul style="list-style-type: none"> • Engineering Certificate must be submitted for Types 2 and 3 Developments in order to ensure compliance with: <ul style="list-style-type: none"> - Applicable Australian Standards - Building Code of Australia (BCA), and - Development Conditions set by the PoE • Depending on the complexity and nature of the proposed Development, submission of an Engineering Certificate may also be required for Type 1 Development at PoE’s discretion.

4. DESIGN CRITERIA AND STANDARDS FOR LAND DEVELOPMENT

Land Developments include, but are not limited to buildings, roads, drainage, laydown areas, fencing and installation of services. The minimum standards for Land Developments are stipulated in this section.

Without limiting its powers, PoE may:

- *Issue Dispensations:* for certain elements of the minimum standards where the Development Applicant and Proponent has demonstrated the benefit or requirement for such dispensation. A dispensation request must be provided in writing. Where a case is demonstrated, and at the discretion of PoE, the Proposal may be deemed in compliance, provided that there is no compromise of:
 1. Other performance criteria
 2. The development vision, and
 3. The permitted use of the seabed / land.
- *Vary development conditions:* or extend the time for compliance of any condition imposed at its discretion.

4.1 Lease agreement

Table 6 – Land performance criteria: Lease agreement

Criteria	Minimum Standard
a) Development Applicant and Proponent is granted tenure for the proposed use of the land by PoE prior to the commencement of any works.	<ul style="list-style-type: none"> • Proposed operational activities must be encompassed in the licence, lease, or agreement between the Development Applicant and proponent and PoE for the use of the land. Any new activities that are not covered in the permitted use of the land shall be presented to PoE for approval. • If PoE approves a new permitted use of the land, a written agreement between PoE and the Development Applicant and Proponent must be formalised (i.e. existing lease agreement to be amended, a new licence or deed of easement to be issued).
b) The Development shall be consistent with the Lease/Licence Agreement.	<ul style="list-style-type: none"> • No part of the Development (such as buildings, depots, storage facilities) is sited outside of the registered boundary. • The use of the land is in accordance with the permitted used set out in the Lease / Licence Agreement, unless prior consent of PoE is obtained. • Buildings, storage facilities, depots and similar shall be maintained in good condition.

4.2 Fill material brought on to site

Table 7 – Land performance criteria: Fill material

Criteria	Minimum Standard
<p>a) Any fill brought onto PoE lands by the Development Applicant and Proponent is required to be high quality uncontaminated fill material.</p>	<ul style="list-style-type: none"> • The Development Applicant and Proponent shall obtain PoE's approval prior to bringing fill material onto site. • All risks with placing fill on the land and subsequent activities upon that land remain the responsibility of the Development Applicant and Proponent.
<p>b) Fill materials need to meet the environmental, safety and engineering requirements.</p>	<ul style="list-style-type: none"> • Development Applicant and Proponent shall sample and test the material to demonstrate compliance with the criteria for clean fill. • Development Applicant and Proponent shall submit a risk assessment to PoE for placing the material at the nominated location including monitoring of the fill material. • Use of clay as fill material is not permitted • PoE may instruct the Development Applicant and Proponent to undertake a geotechnical analysis of the material in order to ensure its adequacy for the purpose. • Development Applicant and Proponent shall maintain records of the source, volume and placement of fill material to the site and provide such information to PoE as each filling project is completed, or every 6 months, whichever is the lesser.

4.3 Buildings

The following performance criterion is applicable to both temporary and permanent buildings.

PoE will specify a period to which a temporary building is allowed to remain within an approved site and the requirements for removal.

Table 8 – Land performance criteria: Buildings

Criteria	Minimum Standard
a) Buildings are designed and constructed consistent with the Building Code of Australia (BCA), Australian Standards and all applicable authorities" requirements.	<ul style="list-style-type: none"> Buildings of all classes have to be designed and constructed so that they comply with the provisions indicated in the BCA Australian Standards and all applicable authorities" requirements. Buildings of all classes are to be approved by the Shire of Esperance, as required, to ensure that they comply with BCA.
b) Buildings structures must function efficiently and safely.	<ul style="list-style-type: none"> Site coverage of all buildings must allow for sufficient: <ul style="list-style-type: none"> Space between buildings Setbacks Landscaping Car parking Storage and collection areas for rubbish and waste Vehicle manoeuvring and access, and Firefighting resources. DA for buildings shall specify whether the structure is permanent or temporary, the location and design of the structure in relation to surrounding structures and other physical features and footings or other methods of stabilising the structure.
c) Care must be taken to ensure the durability of the components used in the construction and operation of buildings and structures.	<ul style="list-style-type: none"> Permanent building and structures shall have a minimum design life of 25 years unless others specified, depending on the type of structure and proposed use. All components used in every aspect of construction are to be suitably durable materials, able to withstand local climatic conditions.
d) Site planning of buildings must prevent impacts upon underground services and vehicle circulation.	<ul style="list-style-type: none"> The site layout must avoid building over existing services (such as potable water supply mains, sewer or storm water mains, and electrical, telecommunication and fibre optic cables) and allow for safe and effective manoeuvring of vehicles near services. The Development of the site must not adversely impact existing site drainage. If necessary, local on-site drains shall be constructed to ensure the site discharges no the perimeter drains. Refer to

Criteria	Minimum Standard
	Storm Water Criteria (Section 4.10).
e) Outdoor lighting must be provided for safety and security where required.	<ul style="list-style-type: none"> Where it is intended that a facility will operate at night, outdoor work areas, car parking and pedestrian areas must incorporate safety lighting in accordance with Australian Standards.
f) Where applicable, a Landscape Master Plan shall be produced and submitted as part of a DA.	<ul style="list-style-type: none"> Landscaping element of the Development shall comply with Shire of Esperance policies, unless dispensation from PoE is granted. The Landscape Master Plan shall include, as a minimum: <ul style="list-style-type: none"> Percentage of the site devoted to landscaping Areas subject to landscaping works Location and species of plants Other materials imported, arranged and/or constructed on the site Areas to be irrigated and the systems to be used, and Proposed staging, if any, of works Proposed irrigation shall utilise alternative water sources such as captured storm water or recycled water, wherever possible.

4.4 Fences

Table 9 – Land performance criteria: Fences

Criteria	Minimum Standard
a) Development areas shall be appropriately delineated with approved fencing.	<p>Temporary Fences</p> <ul style="list-style-type: none"> Installation of temporary fences is permitted in construction sites as part of site establishment. Fences shall be installed prior to the commencement of construction activities and be included in the Development Approval for site establishment. Temporary construction site fences are to be removed once the construction activities are completed. <p>Permanent Fences</p> <ul style="list-style-type: none"> Perimeter fences must be at least 1.8 m high and should be of chain wire construction. Chain wire fences up to 3m high are acceptable. Perimeter fences must be located either within the leased area or on the boundary line. Boundary coordinates must be obtained from PoE by the Development Applicant and Proponent. For the installation of perimeter fences, the proponent shall engage a licensed surveyor to undertake a boundary survey of the property.

Criteria	Minimum Standard
	<ul style="list-style-type: none"> • Solid Colorbond or similar fences may be used within lease areas for security or privacy, however, PoE approval must be obtained for all fences constructed of solid material. • Unless there is a legal, security or other requirement to comply with, PoE prefers Proponents to leave barbed wire off the fences, to make the fences more fauna friendly. • All fencing shall be designed in accordance with AS 1725: Chain-link fabric security fencing and gates. • A full site plan is to be submitted, showing the structural details of the fence as well as the height and location of the fence in relation to the property boundaries and existing buildings on the property.

4.5 Signage

Table 10 – Land performance criteria: Signage

Criteria	Minimum Standard
a) Approved signage is installed within the site.	<ul style="list-style-type: none"> • A DA is required for the installation of permanent and temporary signs within the site. Signs to be installed within a building do not require PoE approval. • A plan showing structural details, height and location of the sign in relation to the property boundaries and/or existing buildings on the property, as applicable, as well as inscription to appear in the sign, method of construction and fixing of the sign must be submitted to PoE for approval.
b) Permanent and temporary signage is designed of a standard to the satisfaction of PoE and Australian Standards.	<ul style="list-style-type: none"> • Any sign shall have all writing, lettering and colouring carried out in accordance with AS 1744: Forms of Letters and Numerals for Road Signs and Main Roads of Australia, as required.
c) Permanent and temporary signage is placed in a safe and effective manner of a standard to the satisfaction of PoE and Australian Standards.	<ul style="list-style-type: none"> • A sign shall not be erected or maintained: <ul style="list-style-type: none"> - So as to endanger public safety, - So as to obstruct or impede sight-lines required for the free and safe movement of traffic into or from any street, vehicle circulation path, - So as to be likely to be confused with or mistaken for an official traffic light or sign or so as to contravene the Road Traffic Act 1974 or Main Roads Act 1930. - On any building or structure which will detrimentally affect the structural integrity of the building or structure, - On a road reserve, footpath, drainage reserve, or carriageway, unless approved by PoE, and

Criteria	Minimum Standard
	<ul style="list-style-type: none"> - Outside the property boundary. • Permanent signs shall be securely fixed to the structure by which it is supported. • Some signage may require appropriate barriers /bollards to minimise the potential for vehicle impact. • Temporary signs shall be securely fixed to the structure by which it is supported and shall be removed during cyclone events or constructed to permanent sign standards. • Construction sites must be appropriately signed. Any such sign shall be removed within seven (7) days of completion of the works on the construction site.
<p>d) Permanent entrance signs shall be erected within the site of a standard to the satisfaction of PoE.</p>	<ul style="list-style-type: none"> • A lot sign shall be placed at the entrance of the site, for which details are shown in Table 4.1. Sign lettering and numerals shall be in accordance with AS 1744: Forms of Letters and Numerals for Road Signs. The lot sign support post shall be made from galvanised steel or painted in accordance with the Shire of Esperance's colour requirements. • The lot sign shall be set vertically and located within the lease area at 1.5m from the entrance of the lease area. • The lowest part of the lot sign shall be a minimum of 1.8m above the ground level or 2.2m if in a pedestrian access. • Signage stating the minimum safety Personal Protective Equipment (PPE); site induction requirements; visitor directional sign; speed limit; and traffic flow direction; shall be placed at the entrance of the site.

4.6 Car park

Table 11 – Land performance criteria: Car park

Criteria	Minimum Standard
<p>a) Parking areas are to be provided on site to meet all operational, employee and customer needs in compliance with BCA and applicable Australian Standards.</p>	<ul style="list-style-type: none"> • Parking areas are to be provided on site to accommodate all vehicles expected to visit and remain on the site during construction and operation phases. On-street vehicle parking is not permitted. • Car park must be sealed to Shire of Esperance policies and procedures. • The minimum design life for vehicle access and parking areas shall be 20 years with design loadings as applicable for the pavement use. • Delineation of parking bays, signage, kerbing, wheel stops, and aisle width shall be completed in accordance with AS 2890.1 and AS 2890.2, with a

Criteria	Minimum Standard
	<p>minimum car park bay dimension of 2.8m wide and 5.8m long.</p> <ul style="list-style-type: none"> Development Applicant and Proponent shall ensure the provision and location of car parking bays designed to accommodate disabled people and vehicles designed for use by disabled persons as required by the Building Code of Australia and PoE.
b) Car park shall be permanently maintained to the satisfaction of PoE.	<ul style="list-style-type: none"> Car park shall be maintained in good condition.

4.7 Road access and driveways

Table 12 – Land performance criteria: Road access and driveways

Criteria	Minimum Standard
a) On site vehicles access is designed to be safe, effective, minimise conflicts and of a standard to the satisfaction of PoE.	<ul style="list-style-type: none"> Driveways must be sealed to Shire of Esperance standards. Minimum design life for public access, driveways and common road pavements shall be 20 years with design loadings as applicable for the road use. Driveway width and radii shall be designed to allow a double road train in its own lane and triple road train in both lanes. The design speed of driveways for semi-trailers is 5 kph. Clearances must be suitable for a Triple Road Train to enter each site. Some driveways will require a culvert of an appropriate size for water flow and must be capable of supporting the maximum vehicle weight. The minimum culvert size is a 300mm diameter pipe, though the actual size required must be assessed and designed accordingly. Overall culvert design, including diameter, headwalls and erosion protection, must be appropriately designed by a Registered Professional Engineer. PoE approval must be obtained for pipe or culvert details and driveway design on all access points.
b) Road access and driveways shall be permanently maintained to the satisfaction of PoE.	<ul style="list-style-type: none"> Road access and driveways shall be maintained in good condition. Development Applicants and Proponents are responsible for sites out to the main road interface, not the lease boundary.

4.8 Traffic management

Table 13 – Land performance criteria: Traffic management

Criteria	Minimum Standard
<p>a) Vehicle circulation and manoeuvring is provided on-site to meet all operational, employee and customer needs.</p>	<ul style="list-style-type: none"> • Driveway and on site road design shall facilitate entering the site without queuing across footpaths or onto external roads. All traffic shall be accommodated within property and/or lease boundary. • An access, circulation, manoeuvring and parking plans should illustrate the following details, as a minimum: <ul style="list-style-type: none"> - Estimated traffic volumes - Type of vehicles and loadings - Dimensions of all pavement and areas - Turning circles for the largest vehicle accessing the site - Pavement design details (in-situ preparation, layer works depths and materials, seal), and - All gradients of parking, access and circulation areas • Appropriate signage, line marking and lighting are provided for on-site circulation routes. • Appropriate safety barriers are provided where required. • Sufficient space is provided on-site to ensure safe and effective manoeuvring of vehicle around the site. • Access and manoeuvring of emergency service vehicles shall be considered in the design and construction of driveways and on site roadways.
<p>b) Traffic flow generated by the development during both construction and operational phases shall be managed in accordance with an approved Construction Traffic Management Plan and Operational Traffic Management Plan.</p>	<ul style="list-style-type: none"> • Construction Traffic Management Plan (CTMP) is to be submitted to PoE for approval and shall comply with Australian Standards 1742: Manual of Uniform Traffic Control Devices Set. The Construction Traffic Management Plan is to be prepared by a suitably qualified person with MRWA accreditation in Advanced Worksite Traffic Management, if traffic flow is affected by the works and the installation of traffic control devices and mechanisms is required. • Operational Traffic Management Plan (OTMP) is to be submitted to PoE for approval and shall comply with MRWA and applicable Australian Standards and is to be prepared by suitably qualified person with MRWA accreditation in Advanced Worksite Traffic Management. • If in the opinion of PoE the CTMP or OTMP is complex then PoE may require that an engineer with MRWA accreditation as a Road works Traffic Manager prepare or review the CTMP and OTMP. • The OTMP is to be submitted at least two weeks prior

Criteria	Minimum Standard
c) Off-site works complement the road network to safety and efficiently meet the operational requirements.	<p>to the commencement of site operations to allow sufficient time for PoE to review and comment.</p> <ul style="list-style-type: none"> The OTMP must be approved by the PoE before site operations commence. Works required to augment the road network to meet the operational needs of the development are identified on plans. Design and construction of off-site road network infrastructure shall meet: <ul style="list-style-type: none"> Main Road WA's requirements Shire of Esperance requirements, and PoE Traffic Management Plan requirements A traffic management study may be required addressing impacts of the development and associated vehicle activity on the road network.

4.9 Services

Table 14 – Land performance criteria: Services

Criteria	Minimum Standard
a) Land is adequately serviced to a standard that would be required or expected of the new Development.	<ul style="list-style-type: none"> Services shall be designed and installed in compliance with the service provider's standards. Services shall be consolidated into services corridors to minimise impact on future land use. If required, the Development must include provision for additional infrastructure to facilitate future developments. PoE can facilitate to the Development Applicant and Proponent available information regarding the location of existing services in order to ensure that the proposed infrastructure design and layout do not compromise existing services, easements and planned future land uses. The Development Applicant and Proponent is responsible for collecting all the necessary information of location of existing services and easement, etc. from different sources (Landgate, service providers, PoE) and for verifying its accuracy. PoE does not guarantee the accuracy of the provided information.
b) The land is serviced with water to a standard that would be required or expected of new Development	<p>Details of water supply and water storage requirements shall be submitted to PoE and Water Corporation for approval</p> <ul style="list-style-type: none"> Water Corporation approval must be obtained if water supply is required from existing water pipes or if the installation of new pipes and water meter is required Refer to www.watercorporation.com.au

Criteria	Minimum Standard
	<ul style="list-style-type: none"> New water lines required in road reserves shall only be laid in defined service corridors with the approval of both PoE and Water Corporation. Issued for Construction drawings need to be prepared and approved by the Water Corporation and submitted to PoE prior to the commencement of construction. PoE encourages proponents to capture and use roof water via rainwater tanks as fit for purpose.
<p>c) The land is serviced with power to a standard that would be required or expected of new Development.</p>	<ul style="list-style-type: none"> Power lines shall be installed underground within the site, unless otherwise approved by PoE. Appropriate warning signage indicating the location of buried cables must be installed. New power lines required in road reserves shall only be located in defined service corridors with the approval of PoE. Electrical services installations shall be in accordance with all applicable Australian Standards and other regulatory and authorities' requirements. The Development Applicant and Proponent is responsible for collecting all the necessary information and verifying its accuracy.
<p>d) The land is serviced with telecommunications to a standard that would be required or expected of new Development.</p>	<ul style="list-style-type: none"> New communications infrastructure required in road reserves shall only be located in defined service corridors with the approval of both PoE and telecommunications provider. Installation of communication services shall be in accordance with all applicable Australian Standards and other regulatory and authorities' requirement. The Development Applicant and Proponent is responsible for collecting all the necessary information and verifying its accuracy.
<p>e) The land is serviced with lighting to a standard that would be required or expected of new Development.</p>	<ul style="list-style-type: none"> Street lighting shall be designed in accordance with the Australian Standard series AS 1158-2005: Lighting for Road and Public Spaces Set to provide category P4 light on road verges and other access ways for pedestrians. Lighting will be required in laydown areas used regularly outside of normal daylight hours. Lighting must not interfere with the visibility of existing or planned navigational aids and must not spill onto adjacent areas off-site. Outdoor lighting must be provided for safety and security particularly where it is intended that a facility will operate at night. Site lighting shall be appropriate to its intended usage patterns and work areas. Lighting should provide a safe working environment, and the Development Applicant and Proponent should outline what lighting on-site is proposed, how this will be managed and

Criteria	Minimum Standard
<p>f) The land is serviced with firefighting resources to a standard that would be required or expected of new Development</p>	<p>what light levels it will provide.</p> <ul style="list-style-type: none"> • Fire hydrants and other required firefighting resources are provided in accordance with Department of Fire and Emergency Services (DFES) requirements. • Fire services shall be installed in accordance with all applicable Australian Standards and other regulatory and authorities' requirements. • The Development Applicant and Proponent will provide written confirmation from the regulator. • Development Applicants and Proponents must take appropriate actions to control possible fires within developments through the use of portable extinguishers or an on-site firewater reticulation system. • Any building larger than 500m² will require a fire water reticulation main in accordance with the BCA. Depending on the size and scale of the Development, a "Fire Study" may be required to be completed by the Development Applicant and Proponent and approved by DFES. • Access for fire trucks shall be allowed in the design of driveways and roads.
<p>g) Waste management must comply with relevant regulations and applicable standards.</p>	<ul style="list-style-type: none"> • Waste-storage areas shall be sized to suit the frequency of waste removal from site and located for ease of access by waste removal vehicles. Bins shall be fitted with lids and/or covers to stop windblown litter and access by feral animals. • All waste materials including fuel, oil, chemicals, hazardous materials and sewage shall be removed from the site and disposed of in accordance with regulatory requirements and transferred to an authorised disposal site. Burning of waste is not permitted on site. • Grey or Black water treatment systems are to be approved by the Shire of Esperance and may require referral to the Department of Health.
<p>h) The land is serviced with sewerage to a standard that would be required or expected of new Development.</p>	<ul style="list-style-type: none"> • Since there is no centralised sewerage scheme for PoE lands, Development Applicants and Proponents need to install their own self-contained systems. The Development Applicant and Proponent shall provide details of on-site sewerage system for PoE approval. • Onsite effluent disposal systems are to comply with the requirements of the Health (Treatment of Sewerage and Disposal of Effluent and Liquid Waste) Regulations 1974. • The PoE encourages Development Applicants and Proponents to re-use recycled effluent water where possible for landscaping.

4.10 Drainage and stormwater management

Table 15 – Land performance criteria: Drainage and stormwater management

Criteria	Minimum Standard
<p>a) Storm water drainage from the site is at approved locations and of an acceptable quality and volume to prevent harmful impacts on catchment areas and Port waters</p>	<ul style="list-style-type: none"> • A Site-Based Stormwater Management Plan is prepared and must provide for: <ul style="list-style-type: none"> - An acceptable level of flood immunity - Catchments areas - Erosion and sediment control, and - On-site drain, if necessary - The requirements of the PoE Stormwater Management Plan including: <ul style="list-style-type: none"> • The amount of stormwater that needs to be treated within the site shall be equivalent to a 1 year 1-hour Average Return Interval (ARI) (Dow Stormwater Manual); • Infiltration/sedimentation trenches and/or drains have sufficient capacity to infiltrate stormwater runoff up to a 2-year 72-hour ARI storm event (WQPN No 20); • All open and piped stormwater conveyance systems designed to convey stormwater runoff up to 10-year ARI critical storm event with minimal occurrence of overtopping (DoW Stormwater Manual). • Rainwater tanks shall be suitably designed and constructed to retain stormwater runoff from connected areas during the 1-year 1 hour ARI storm event; • Refer to the Department of Water stormwater management manual for the advisory targets for different stormwater treatments. • Stormwater discharge points are located so that they do not adversely impact on areas of high ecological value, or cause nuisance or damage to adjoining properties. Drain outlets shall be appropriately treated to ensure no erosion occurs during design flows.

4.11 Storage and laydown areas

Table 16 – Land performance criteria: Storage and laydown areas

Criteria	Minimum Standard
a) Storage areas for goods, materials and containers must be configured in a manner that does not affect the environment and safety of the area.	<ul style="list-style-type: none"> All goods, materials or machinery stored on-site must be stored in a safe manner which satisfies all regulatory and legislative requirements. Fuelling of vehicles and equipment shall comply with the relevant regulations and standards. It must be undertaken in sealed and bunded areas away from drainage systems, and precautions must be to place to ensure accidental spills will not escape into groundwater, stormwater and waterways. Installation of sea containers is permitted within the site only for storage purposes; prior approval of PoE must be obtained. Should the Development Applicant and Proponent wish to use an alternative method, tie down details of the sea container shall be certified by a NPER registered professional structural engineer.
b) Laydown areas are designed and constructed to be safe, effective, and to the satisfaction of PoE.	<ul style="list-style-type: none"> Laydown areas must be dust free. Application of dust suppressant is permitted and shall be approved by the PoE before use.
c) All storage and laydown areas shall be permanently maintained to the satisfaction of PoE.	<ul style="list-style-type: none"> Storage facilities, depots, laydown areas and any other open area shall be maintained in good condition.

4.12 Dangerous goods storage areas

Table 17 – Land performance criteria: Dangerous goods storage areas

Criteria	Minimum Standard
a) Storage of hazardous / dangerous or flammable liquids and materials must not pose a safety, environmental or health threat to any adjoining areas or people and must demonstrate that is appropriately separated from surrounding land users.	<ul style="list-style-type: none"> Storage of hazardous/dangerous or flammable liquids and materials shall be stored, as a minimum, within a bunded and well-ventilated area all in compliance with applicable Australian Standards and other regulatory and authorities' requirements. Provision must be made for appropriate firefighting and first aid equipment. Provisions must be made for potential spills to be bunded and retained on site for removal and disposal by approved means. Information about quantities, location and type of

Criteria	Minimum Standard
	<p>dangerous or flammable liquids / materials are provided to PoE.</p> <ul style="list-style-type: none"> Material Safety Data Sheet (MSDS) of any dangerous goods to be stored within the site shall be submitted to PoE along with the respective Dangerous Goods Storage Licences. Fuel storage on site must be contained within a sealed bunded area and comply with the relevant regulations and standards. All safety procedures are to be identified and adhered to. Precautions must be in place to ensure that any spills do not escape into the groundwater, stormwater or any adjacent tidal or waterways. Fuelling of vehicles and equipment shall comply with the relevant regulations and standards. It must be undertaken on impervious surfaces at locations away from drainage systems, and precautions must be in place to ensure spills will not escape into groundwater, stormwater and / or waterways.
<p>b) Storage facilities for hazardous / dangerous or flammable liquids and materials shall be designed and constructed to safely and efficiently meet operational requirements.</p>	<ul style="list-style-type: none"> The Development Applicant and Proponent is responsible for obtaining appropriate licenses for the storage of hazardous /dangerous or flammable liquids and materials. Copies of these licences are to be provided to PoE. The Development Applicant and Proponent is responsible for ensuring that all bunding on site complies with the conditions on the Operations Flammable and Combustible Liquid licence and AS 1940, where applicable. The Development Applicant and Proponent is responsible for ensuring that the requirement under Schedule 1 of the Environment Protection Regulations 1987 is complied with, where applicable. The Development Applicant and Proponent is responsible for reporting the site to the DER as having a prescribed activity under the Contaminated Site Acts 2003, where applicable. The design of a bund facility to store flammable and combustible liquid or materials shall comply with AS 1940, including, but not limited to: <ul style="list-style-type: none"> The bund must be built from impervious and fire resistant materials which are compatible with the liquids to be contained The bund shall be sufficiently impervious to retain spillage and to enable recovery of any such spillage, and The bund shall be designed to withstand the hydrostatic head when full Copy of the correspondence between the proponent and PoE and DMP regarding the compliance of the

Criteria	Minimum Standard
	above items shall be submitted to PoE.
c) The Development Applicant and Proponent is responsible for ensuring that the product is appropriately licensed, where required, in accordance with a) Flammable and Combustible Liquids Regulation 1994, and b) Dangerous Goods Safety Management Act 2001.	<ul style="list-style-type: none"> Any Development relating to the storage, transportation and handling of any dangerous or hazardous goods requires appropriate approvals and permits from the Department of Mines and Petroleum (DMP). Relevant examples of hazardous goods include, but are not limited to, the import, export and storage of Ammonium Nitrate, Anhydrous Ammonia and Explosive Material. For further information refer to www.dmp.wa.gov.au. Copies of the Dangerous Goods Storage Licences shall be submitted to PoE.
d) Dangerous goods storage areas shall be permanently maintained to the satisfaction of PoE.	<ul style="list-style-type: none"> Dangerous goods storage areas shall be maintained in good conditions to the satisfaction of PoE.

4.13 Wash-down facility

Table 18 – Land performance criteria: Wash-down facility

Criteria	Minimum Standard
a) Wash-down pads are designed and constructed to be effective of a standard to the satisfaction of PoE.	<ul style="list-style-type: none"> Wash-down activities can only be undertaken at dedicated wash-down areas approved by PoE. Wash-down pad must be sealed and banded to exclude stormwater runoff. The wash-down pad dimension shall be designed to cater for the likely spill area. The volume of wash-down pads shall be designed to contain any anticipated spill and any foreseeable rainfall and hose down events. The wash-down pad shall have sufficient cross and long fall to provide drainage to a drain point. Drain point (sump) is to be provided. Proponents may choose to include an evaporation pad sized for the usage and volume of the wash bay, with discharge and / or reuse on-site appropriate following suitable treatment of the wastewater to make it fit for purpose. Sumps may: <ul style="list-style-type: none"> Be pumped out on a regular basis to avoid runoff and to prevent soil contamination Need treatment to preclude breeding of disease vectors, such as mosquitoes, and Need special treatments adjacent to active wharf areas

4.14 Environmental and heritage management

Table 19 – Land performance criteria: Environmental and heritage management

Criteria	Minimum Standard
<p>a) All developments must be managed in accordance with an approved Construction Environmental Management Plan and Operational Environmental Management Plan.</p>	<ul style="list-style-type: none"> • Construction Environmental Management Plan (CEMP) must be submitted to PoE, at least two (2) weeks prior to the commencement of site works <ul style="list-style-type: none"> - The CEMP must demonstrate that all potential environmental and heritage impacts resulting from the construction works have been identified, risks assessed and measures put in place to prevent or mitigate potential harmful impacts • Operational Environmental Management Plan (OEMP) must be submitted to PoE, at least two (2) weeks prior to the commissioning of the facility <ul style="list-style-type: none"> - The OEMP must demonstrate that all potential environmental and heritage aspects resulting from the operation of the development have been identified, risks assessed and measures put in place to prevent or mitigate potential harmful impacts • PoE can assist in the preparation of these CEMP and OEMP by identifying issues relevant to a site based on previous experience. PoE prefers early engagement in this process to maximise the value of input.
<p>b) All practical precautions must be taken to prevent spills of fuel, oil, chemicals and other hazardous and to ensure that contamination of the land does not occur.</p>	<ul style="list-style-type: none"> • Hardstanding, kerbing and channelling of areas dedicated to fuelling and maintenance of vehicles and equipment, storage of fuel and chemicals, etc., with runoff being collected and appropriately treated before disposal or removal. • Appropriate cleaning agents and emergency equipment should be provided on site. • Land-based spills shall be reported to PoE and/or EPA where containment is not achieved. • All contamination of land during either the construction or operational phases must be cleaned up in accordance with EPA and other relevant regulations, to the satisfaction of PoE. • All fill imported and used on site must be free of contamination. The fill shall not be sourced from sites prescribed under the Contaminated Sites Act, Environmental Protection Act 1994 unless prior approval has been received from the EPA and PoE. If fill issued, proof that the fill is free of contamination must be provided to PoE prior to delivery to site. • Development Applicant and Proponent is to maintain records of the source, volume and placement of

Criteria	Minimum Standard
	<p>imported fill to the site. This will include:</p> <ul style="list-style-type: none"> - Source of fill (land lot and physical address) - Contamination status of this land parcel via cross reference to the Contaminated Sites Register - Volume of the fill - Brief physical description, and - Area placed on the site <ul style="list-style-type: none"> • This information will be provided to PoE as each filling project is completed, or every 6 months, whichever is the lesser. • Development Applicant and Proponent shall either: <ul style="list-style-type: none"> - Organise for a soil sample analysis to be undertaken by a third independent party, at Development Applicant's and Proponent's cost, prior to the development of undisturbed land or prior to entering into a new lease agreement with PoE, or - Accepts the land as uncontaminated land and thereby assume all responsibility of contamination during the use of the land • Early discussions should be held with PoE to facilitate investigations and identify what data PoE has on-hand.
<p>c) The Development Applicant and Proponent must ensure that all Aboriginal heritage sites within the area to be developed are identified and approvals are obtained from regulatory bodies, where applicable.</p>	<ul style="list-style-type: none"> • The Development Applicant and Proponent is responsible for identifying all aboriginal sites located within the area to be developed and shall: <ul style="list-style-type: none"> - Act in close consultation with PoE's Environmental Manager, and - Undertake any required archaeological and Aboriginal heritage site surveys. All practical attempts to avoid any items must be made and demonstrated • Developments occurring on undisturbed land will require archaeological surveys, close liaison with PoE's Environmental Manager and consultation with representatives from the local Aboriginal groups to identify sites that may be impacted <ul style="list-style-type: none"> - Approval to relocate or disturb an Aboriginal site is required via a Section 18 Notice under the Aboriginal Heritage Act. - It is the Development Applicant's and Proponent's responsibility to arrange for all surveys, liaison and consultation as well as to obtain all necessary approvals associated with the Development. - The Department of Indigenous Affairs (DIA) website provides guidelines and advice for developers: www.dia.wa.gov.au (under Heritage and Culture). - PoE holds a significant volume of information

Criteria	Minimum Standard
<p>d) The Development Applicant and Proponent must ensure that all sensitive environmental areas within the area to be developed are identified and approvals are obtained from regulatory bodies, where applicable.</p>	<p>relating to sites within Port lands, and may be able to assist this process. Early and thorough engagement with PoE is encouraged.</p> <ul style="list-style-type: none"> • Copies of all Aboriginal heritage reports and archaeological surveys shall be provided to PoE. • The Development Applicant and Proponent is responsible for identifying all sensitive environmental areas within the development. The Development Applicant and Proponent shall: <ul style="list-style-type: none"> - Act in close consultation with PoE's Environmental Manager, and - Undertake any required environmental monitoring and surveys. • The Development Applicant and Proponent is responsible for obtaining all required permits or approvals from applicable regulatory bodies. This will include permits such as Native Vegetation clearing permits, works approvals and permits. Copies of any reports and all correspondence between the Development Applicant and Proponent and regulatory bodies shall be submitted to PoE.

4.15 Safety and security management

Table 20 – Land performance criteria: Safety and security teams

Criteria	Minimum Standard
<p>a) All developments must be managed in accordance with an approved Construction Safety Management Plan (CSMP) and Operational Safety Management Plan (OSMP).</p>	<ul style="list-style-type: none"> • The Development Applicant's and Proponent's CSMP must: <ul style="list-style-type: none"> - demonstrate that all potential safety aspects resulting from the construction works have been identified, risks assessed and measures put in place to prevent or mitigate potential harmful impacts, and - Be submitted to PoE at least two (2) weeks prior to the commencement of site works. • The Development Applicant and Proponent's OSMP must: <ul style="list-style-type: none"> - demonstrate that all potential safety aspects resulting from the operation of the facility have been identified, risks assessed and measures put in place to prevent or mitigate potential harmful impacts, and - Be submitted to the PoE, at least two (2) weeks prior to the commissioning of the facility. • Where the Development implies maritime activities, an Oil Spill Response Management Plan is to be submitted to PoE.

Criteria	Minimum Standard
<p>b) The Development must be designed to conform with all relevant legislation relating to workplace safety and hazard management.</p>	<ul style="list-style-type: none"> • The Development must be designed to conform with all relevant legislation relating to workplace safety and hazard management. Legislation includes: <ul style="list-style-type: none"> - Consolidated Occupational Safety and Health Act 1984 - Occupational Safety and Health Regulations 1996 - Environmental Protection (Noise) Regulations 1997 - Environmental Protection Regulations 1987 - Explosives and Dangerous Goods (Explosives and Dangerous Goods Handling and Storage) Regulations 1992 - Gas Standards (Gas Fitting and Consumer Gas Installations) Regulations 1999 - Health Regulations 1974 (Treatment of Sewerage and Disposal of Effluent and Liquid Waste), and - Any other regulatory or authorities' requirements applicable to a specific application. - Department of Mines and Petroleum
<p>c) Risks and hazards associated with the storage or transport of hazardous or flammable materials shall satisfy all local, state and Commonwealth legislation and / or requirements.</p>	<ul style="list-style-type: none"> • For any development storing hazardous or flammable materials, a hazard identification and risk analysis is to be undertaken with the subsequent implementation of a safety / hazard management plan. • Storage of any hazardous or flammable materials must be appropriately licensed in accordance with: <ul style="list-style-type: none"> - Flammable and Combustible Liquids Regulation 1994 - Dangerous Goods Safety Management Act 2001 - DFES and DMP involved in the licensing process, • Storage of any hazardous or flammable materials must not pose a safety, environmental or health threat to any adjoining areas or people and must demonstrate that is appropriately separated from surrounding land users. • Material Safety Data Sheet (MSDS) of any dangerous goods to be stored within the site shall be submitted to PoE along with the respective Dangerous Goods Storage Licences.
<p>d) The construction site is managed and operated to ensure it is a safe workplace for employees and visitors.</p>	<ul style="list-style-type: none"> • The Development Applicant and Proponent and its contractors are to ensure that a workplace plan that meets the requirements of Occupational Safety & Health Act 1984 is developed and implemented during construction.
<p>e) Development must not contravene any Australian quarantine or customs requirements</p>	<ul style="list-style-type: none"> • Development complies with all requirements of the: <ul style="list-style-type: none"> - DAFF Biosecurity (Ex AQIS) - DAFF Biosecurity Services, associated Commonwealth legislation, and - Any subordinate legislation (contact www.aquis.gov.au and www.customs.gov.au for further information).

Criteria	Minimum Standard
f) A Security Management Plan that sets out the systems, practices and procedures to govern the surveillance and security of the premises, plant, equipment and infrastructure is implemented	<ul style="list-style-type: none"> The Development Applicant and Proponent shall develop a Security Management Plan that sets out the systems, practices and procedures governing the surveillance and security of the premises, plant, equipment and infrastructure and ensure that it is implemented. Where the Development implies access from and to maritime sites, the Security Management Plan shall include the requirements of the Maritime Transport and Offshore Facilities Security Act 2003.

4.16 Community and agency liaison

Table 21 – Land performance criteria: Community and agency liaison

Criteria	Minimum Standard
a) All reasonable precautions must be taken by the Development Applicant and Proponent to reduce and mitigate interferences caused to the Port and PoE's facilities users and any other party that may be affected by the Development.	<ul style="list-style-type: none"> The Development Applicant and Proponent shall notify in writing of the proposed Development to adjoining owners or leaseholders, PoE, and any other party as nominated by PoE that may be affected by the development, prior to the commencement of the construction works <ul style="list-style-type: none"> The Development Applicant and Proponent must address neighbours' concerns and issues, to the satisfaction of PoE Should a development require closure of public or main road or restriction of the traffic flow through such roads, the Development Applicant and Proponent must obtain approval from the authority that regulates such roads. In addition, the Proponent must notify affected parties with: <ul style="list-style-type: none"> At least seven (7) days' notice A further three (3) and one (1) day notices prior to each traffic restriction. Installation of portable signs around the affected area and publication of notices in local newspapers may be required. Permits and approvals shall be sought for road closures or traffic restrictions within the Port area.
b) Where applicable, referral agency requirements have been taken into consideration during the design phase of the Development.	<ul style="list-style-type: none"> Where applicable, consultation has occurred with relevant referral agencies.
c) Community groups that may have an interest or	<ul style="list-style-type: none"> Where applicable, community groups that may have an interest in or could be affected by the Development

Criteria	Minimum Standard
could be affected by the Development have been properly notified and consulted prior to the lodgement of the DA.	<p>have been properly notified and consulted prior to the lodgement of the DA.</p> <ul style="list-style-type: none"> PoE is to be consulted regarding correspondence with community groups. PoE can assist with relevant contacts.

4.17 Geotechnical conditions

Table 22 – Land performance criteria: Geotechnical

Criteria	Minimum Standard
a) Ground level geotechnical conditions are sufficient to allow for proposed loadings.	<ul style="list-style-type: none"> All ground level pavements, slabs and hardstand areas have been certified by a Registered Professional Engineer to withstand proposed loading of buildings, vehicles, structures and cargo stacking where applicable. All geotechnical reports and studies carried out in relation to the proposed Development shall be submitted to PoE in both hardcopy and electronic formats.

5. DESIGN CRITERIA AND STANDARDS FOR MARINE DEVELOPMENT

Marine structures include, but are not limited to:

- Wharves
- Mooring structures
- Navigation structures
- Seawalls
- Barge ramps
- Floating platforms
- Reclamation, and
- Walkways.

The minimum standards for marine developments are stipulated in the following section.

PoE may issue dispensations for certain elements of the Minimum Standards where the Development Applicant and Proponent has demonstrated the benefit or requirement for such a dispensation.

- A dispensation request must be provided in writing
- Where a case is demonstrated, and at the discretion of PoE, the proposal may be deemed to be in compliance, provided that there is no compromise of:
 - Other performance criteria
 - The development vision, and
 - The permitted use of the seabed / land.
- Likewise, PoE may vary development conditions or extend the time for compliance of any condition imposed.
- PoE encourages pre-lodgement discussions as early as possible in the development application process. This allows PoE to outline any issues with the development, the information requirements and provide any existing information that PoE holds to assist the Development Applicant and Proponent during the process.

5.1 General considerations

Table 23 – Marine performance criteria: General marine

Criteria	Minimum Standard
<p>a) Maritime Structures are designed and constructed consistent with the Australian Standards.</p>	<ul style="list-style-type: none"> • Design life for all marine structures shall comply with Table 6.1 of AS4997. • Cope level of the marine structures are to consider the level of 100 year storm surge in addition to the rainfall, wave and global warming sea level rise effects. • Minimum design loads for general cargo wharves shall be Class 25 as defined in Table 5.1 of AS4997 plus any specific vehicle and equipment loads that the marine structure will be subject to either during construction or in service. • The design annual probability of exceedance of ultimate environmental and seismic design load events shall be as stipulated in Table B1.2b of the BCA based on the following Importance Levels: <ul style="list-style-type: none"> - Marine structures essential to post disaster recovery, associated with hazardous facilities or for which failure will result in significant detrimental economic or environmental consequences shall be treated as Importance Level 4 structures - Other marine structures shall be treated as Importance Level 2 structures except that structures designed to accommodate a large number of people shall be treated as Importance Level 3 structures • The design annual probability of exceedance of design wave events shall be as stipulated in Table 5.4 of AS4997-2005 based on Function Category 3 (High property value or high risk to people) except that Function Category 2 can be adopted for minor marine structures. The design Function Category may be lowered only with the prior written approval of PoE. Design wave parameters shall be based on available site-specific records and / or appropriate wave climate modelling. • Adequate navigation and vessel manoeuvring clearances shall be provided to PoE's Harbour Master for review and agreement • Marine structures incorporating piles or columns exposed to currents shall be designed to ensure that the critical flow velocity at which flow induced oscillations can commence as stipulated in Clause 38.3 of BS6349-1:2000 always exceeds the maximum design current velocity for the marine structure.

Criteria	Minimum Standard
	<ul style="list-style-type: none"> • Access and safety issues shall comply with the BCA as appropriate and with Clause 3.4 of AS4997. • Displacements and settlements shall comply with Clause 4.2.4 of AS4997 and the relevant sections of the applicable material design code (AS1720, AS3600, AS4100, AS5100 etc.). In addition the adopted design allowable displacements and settlements shall take in account the requirements of any equipment located on the marine structure and the effects of the displacements / settlements on the marine structure operations. • Buried tie rods shall be protected from loads induced by settlement of the soil by the use of suitable and adequately sized settlement sleeves and shall be adequately protected from corrosion.

5.2 Durability considerations

Table 24 – Marine Performance criteria: Durability considerations

Criteria	Minimum Standard
a) Maritime Structures are designed and constructed so as to ensure the durability of their components and functionality	<ul style="list-style-type: none"> • Development Applicants and Proponents must comply with the durability requirements stipulated in Section 6 of AS4997. • Protective coating systems are to be provided for steel piles and other structural steel components. Design life for the coating systems is to be 15 years to first maintenance. • Cathodic Protection Systems (either sacrificial anodes or impressed current) shall be installed for all permanently immersed steel components. Protective coatings shall be suitable for use with the cathodic protection system. • A suitable corrosion allowance for steel elements forming critical elements/members of the marine structure that are permanently immersed or within the splash zone but shall not be less than 2mm for member protected by a cathodic protection system and / or a protective system. • For pre-tensioned prestressed concrete elements non-prestressed reinforcement must provide at least 40% of the total prestressed plus non-prestressed reinforcement capacity. • Measures additional to the use of concrete covers shall be used to ensure that the required design life is achieved where the design life of the marine structure exceeds 40 years. Such additional measures can include the use of stainless steel, galvanized or epoxy

Criteria	Minimum Standard
	coated reinforcement and/or the use of suitable concrete additives or coatings such as organic or inorganic pore blocker concrete admixtures, chemical corrosion inhibitor admixtures, hydrophobic surface sealants (silanes) and / or cathodic protection systems. Adequate supporting documentation confirming that the proposed measures are suitable for the nominated design life shall be provided to POE.

5.3 Seismic design considerations

Table 25 – Marine Performance criteria: Seismic design

Criteria	Minimum Standard
<p>a) Maritime Structures are designed and constructed consistent with the Australian Standards.</p>	<ul style="list-style-type: none"> • Seismic loads shall be determined in accordance with AS1170.4. • Hazard Factor (Z) used in determining seismic loads shall be 0.12. • Marine structures shall be designed to accommodate: <ul style="list-style-type: none"> - Ultimate limit state seismic loads based on the annual probability of exceedance stipulated in Table B1.2b of the BCA without catastrophic failure or collapse - Appropriate serviceability limit state seismic loads adopted based on engineering judgement • The probability of design seismic events occurring simultaneously with design ultimate wind, wave and current loads and even maximum applied / operational loads is typically very small. Accordingly, engineering judgement shall be used in determining the environmental and applied/operational loads that are taken to act simultaneously with the design seismic loads with the proviso that PoE approval in writing of the proposed simultaneous loads be received prior to proceeding with the design of the marine structure based on these.

5.4 Scour considerations

Table 26 – Marine Performance criteria: Scour considerations

Criteria	Minimum Standard
a) Maritime Structures are designed and constructed consistent with the Australian Standards	<ul style="list-style-type: none"> • Consideration of scour effects shall be in accordance with Clause 4.5 of AS4997. • Adequate scour allowances, but not less than 1.0m, are to be allowed for in the design of marine structures. • Batter slopes under open piled marginal wharves and the sea bed in front of solid quay walls and piers shall be protected from scour due to waves, current and propeller / thruster wash by the use of suitable measures such as rock armour etc. extending a minimum of two thirds the beam of the maximum design vessel out from the quay line. • Rock material shall comply with the requirements of Clause 57 of BS6349-1:2000 and Clause 4.10.1 of BS6349-7:1991

5.5 Dredging requirements

Table 27 – Marine Performance criteria: Dredging requirements

Criteria	Minimum Standard
a) Dredging works and disposal of the dredged material shall be carried out in accordance with Regulatory requirements.	<ul style="list-style-type: none"> • The Development Applicant and Proponent shall submit a DA Application for any dredging works to be undertaken within PoE's seabed. • The Development Applicant and Proponent shall demonstrate the management of the dredging process will be undertaken in accordance with regulatory requirements and to the Environmental Manager and Harbour Master's satisfaction.

5.6 Fenders

Table 28 – Marine Performance criteria: Fenders

Criteria	Minimum Standard
a) Maritime Structures are designed and constructed consistent with the Australian Standards	<ul style="list-style-type: none"> • Fenders must be: <ul style="list-style-type: none"> - Material and compression tested - Provided with a written rating specification - Resistant to localised damage due to belting or sponsons on vessels hulls, in particular for smaller vessels less than about 5,000DWT, and

Criteria	Minimum Standard
	<ul style="list-style-type: none"> - Adequate to accommodate forces imposed by moored vessels obtained from a suitable mooring analysis • Navigation conditions for berthing shall be based on engineering judgement taking into account the exposure and geometry of the berth. • The design contact point during berthing used in determining design berthing energies must be suitable for the fender arrangement. For example ¼ point berthing may be suitable for the continuous wharf face with fenders spaced to prevent vessels contacting the wharf structure but island type berth arrangements will allow other more severe berthing configurations. • Factors of safety stipulated in Table 4.2.5 of PIANC Guidelines for the Design of Fenders Systems: 2002 shall be applied to the calculated normal berthing energies to allow for abnormal berthing impact cases, except that the factor of safety shall not be less than 2.0 for vessels less than 5,000 DWT. • Suitable low friction facings shall be used on the contact faces of fender assemblies • Fender and fender support structure design shall allow for lateral and vertical loads due friction between the fender and berthing vessel based on the friction factors stipulated in Table 4 of BS6349: Part 4:1994 • The design of fenders must allow: <ul style="list-style-type: none"> - For detrimental effects of overhanging vertical hull angles or slopes (due to bow flare, vessel hull profile and/or listing or heeling of the vessel when berthing) and vessels with low freeboards contacting the fenders or fender frames near the base or only part way up when berthing at low tides. Such detrimental effects include reduction in the energy absorption capacity of the rubber fender and increasing the projection of the vessel hull behind the fender face when the fenders are placed significantly below the marine structure deck level, and - Vessel hulls and/or belting, sponsons or other hull projections and mooring lines to catch on top, underneath on the sides of the fender system and shall be resistant to damage due to this. Such measures may include ensuring the fender frame covers the anticipated range of hull heights and belting / sponson levels for the different design vessel sizes and tide levels, minimizing the gap between the base of the fender frame and low tide level, using tapered edges to the fender frames and using shear, weight and uplift chains.

5.7 Bollards and quick release hooks (QRH)

Table 29 – Marine Performance criteria: Bollards and QRH

Criteria	Minimum Standard
<p>a) Maritime Structures are designed and constructed consistent with the Australian Standards.</p>	<ul style="list-style-type: none"> • Bollards and QRH's are to be provided with written rating specification and tested if necessary. Suitable corrosion protection must be provided • Adequate QRH's shall be provided to allow for one mooring line per hook • Mooring line loads shall be determined in accordance with OCIMF Guidelines and Recommendations for the Safe Mooring of Large Ships at Piers and Sea Islands and AS4997. In particular: <ul style="list-style-type: none"> - Required bollard and QRH capacities for mooring arrangements not subject to significant dynamic effects due to waves and current can be determined in accordance with the simplified method stipulated in AS4997 - The required bollard and QRH capacities for mooring arrangements subject to significant dynamic effects due to wave and current shall be determined by suitable dynamic mooring analyses - In all cases, notwithstanding the conclusions of the mooring analyses, if the bollards or QRH's will be subject to vessel manoeuvring loads the bollard and QRH capacities shall not be less than those stipulated in Table C1 of AS4997. Note that AS4997 stipulates that the capacities stipulated in Table C1 are to be increased by 25% for vessels subject to other than mild conditions.

5.8 Breakwaters and armoured slopes

Table 30 – Marine Performance criteria: Breakwaters and armoured slopes

Criteria	Minimum Standard
<p>a) Maritime Structures are designed and constructed consistent with the Australian Standards.</p>	<ul style="list-style-type: none"> • Breakwaters shall provide the wave attenuation required for safe mooring and operations within the basin/harbour protected by the breakwater without creating adverse conditions in the surrounding area • Rubble mound breakwater side slopes and armoured slopes shall not be steeper than 1:1.5 or shallower than 1:6 (vertical to horizontal). • Slopes must be stable and not prone to slope stability failures. • Rock material shall comply with the requirements of Clause 57 of BS6349-1:2000 and Clause 4.10.1 of BS6349-7:1991 • Breakwaters and armoured slopes shall be designed to provide protection against initial damage, against an intermediate damage level requiring repair and against failure as defined in the design method for waves with a probability of exceedance during the life of the structure that has the prior approval of the PoE. Example probabilities of exceedance are 50% probability of exceedance during the design life for initial damage, 10% of exceedance during the design life for intermediate damage requiring repair and the design wave stipulated in Table 5.4 of AS4997 for the failure. It is anticipated that the adopted design wave sizes will be influenced by the: <ul style="list-style-type: none"> - Availability and cost of rock or armour units of the required sizes - Difficulty and cost of undertaking repairs, and - Magnitude of the detrimental effects that will arise as a consequence of the failure of the breakwater or armoured slope. • Breakwaters and seawalls shall be designed to provide an overtopping rate that is suitable for the activities taking place or structures located in the area at the top of the breakwater or seawall slope using numerical modelling or appropriate specialist means as approved by PoE.