



# Operations - Environmental and Social Management Plan

Walvis Bay Waterfront Pty Ltd

PREPARED FOR



March 2018

DOCUMENT FOR GOVERNMENT APPROVAL

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	ECC-41-54-REP-29-A - Operations - Environment and Social Management Plan (Operations-ESMP)
<b>Client Name:</b>	Walvis Bay Waterfront Pty Ltd
<b>Ministry Reference:</b>	MET Scope of environmental impact assessment for proposed project of Walvis Bay Waterfront Project, Walvis Bay, Erongo Region
<b>Status of Report:</b>	Document for Government Approval
<b>Date of issue:</b>	16 <sup>th</sup> March 2018
<b>Review Period:</b>	

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## Contents

1.	INTRODUCTION .....	6
1.1.	PROJECT BACKGROUND.....	6
1.2.	ENVIRONMENTAL REGULATORY REQUIREMENTS .....	8
1.3.	PURPOSE OF THIS REPORT.....	8
1.4.	MANAGEMENT OF THIS OPERATIONS ESMP .....	8
1.5.	LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THE OPERATIONS ESMP .....	9
1.6.	ENVIRONMENTAL CONSULTANCY .....	9
1.7.	STRUCTURE OF THIS OPERATIONS ESMP .....	9
2.	PROJECT MANAGEMENT AND PERSONNEL .....	10
2.1.	WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD.....	10
2.2.	ORGANISATIONAL STRUCTURE, PERSONNEL ROLES AND RESPONSIBILITIES.....	10
2.3.	CONTRACTORS .....	13
2.4.	EMPLOYMENT .....	13
3.	TRAINING AND COMMUNICATIONS .....	14
3.1.	TRAINING AND AWARENESS .....	14
3.2.	COMMUNICATIONS: WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD.....	14
3.3.	COMMUNICATIONS: TENANTS/OWNERS .....	15
3.4.	COMMUNICATIONS: EXTERNAL .....	15
3.4.1.	COMMUNITY .....	15
3.4.2.	TOURISTS AND VISITORS .....	16
3.4.3.	OTHER STAKEHOLDERS .....	16
3.5.	COMPLAINTS HANDLING AND RECORDING .....	16
4.	REPORTING, COMPLIANCE AND ENFORCEMENT.....	18
4.1.	ENVIRONMENTAL MANAGEMENT SYSTEM .....	18
4.2.	ENVIRONMENTAL PERFORMANCE MANAGEMENT .....	18
4.2.1.	SUMMARY OF ENVIRONMENTAL RISKS AND MITIGATION MEASURES .....	18
4.2.2.	ENVIRONMENTAL INSPECTIONS & COMPLIANCE MONITORING .....	18
4.2.2.1.	DAILY COMPLIANCE MONITORING .....	18
4.2.2.2.	MONTHLY COMPLIANCE MONITORING .....	18
4.2.2.3.	INSPECTION OF PLANT AND EQUIPMENT.....	18
4.2.2.4.	ANNUAL COMPLIANCE MONITORING.....	19
4.3.	REPORTING.....	19
4.4.	NON-COMPLIANCE .....	20
4.4.1.	NON-COMPLIANCE EVENT.....	20
4.4.2.	DISCIPLINARY ACTION.....	20
5.	OPERATIONAL ENVIRONMENTAL MANAGEMENT .....	21
5.1.	OBJECTIVES AND TARGETS .....	21
5.2.	METHOD STATEMENTS AND RISK ASSESSMENTS .....	21
5.3.	MARINA OPERATIONS.....	21
5.4.	ROUTINE MAINTENANCE .....	22
5.5.	NON-ROUTINE MAINTENANCE WORKS .....	22
5.5.1.	DREDGING ACTIVITIES .....	23
5.5.2.	INNER MARINA MAINTENANCE .....	23
5.5.3.	OTHER .....	24
5.6.	SOLID WASTE MANAGEMENT .....	24

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5.7.	MATERIAL MANAGEMENT: DREDGED MATERIAL .....	25
5.8.	RISKS TO THE MARINE ENVIRONMENT.....	25
5.9.	ENVIRONMENTAL MONITORING.....	25
5.10.	POLLUTION CONTROL AND CONTINGENCY PLAN.....	25
5.10.1.	STORAGE OF FUELS, OILS AND CHEMICALS.....	25
5.10.2.	HANDLING OF FUEL, OIL AND CHEMICALS.....	26
5.11.	FIRE PREVENTION .....	27
5.12.	ENVIRONMENTAL EMERGENCY PLAN .....	27
5.13.	ENVIRONMENTAL EMERGENCY AND RESPONSE CONTACTS .....	28
6.	REGISTER OF ENVIRONMENTAL RISKS AND ISSUES .....	29
6.1.	INTRODUCTION.....	29
7.	IMPLEMENTATION OF THE OPERATIONS-ESMP.....	41

**TABLES**

Table 1 – Key Roles and Responsibilities ..... 11

Table 2 - Emergency Services contact telephone numbers..... 28

Table 3 – Environmental Issues, Mitigation and Monitoring Measures..... 30

**FIGURES**

Figure 1 - Project location ..... 7

Figure 2 –Layout ..... 7

Figure 3 – Reporting Structure overview..... 19

**DEFINITIONS AND ABBREVIATIONS**

EAP	Environmental Assessment Practitioner
ECC	Environmental Compliance Consultancy
ESIA	Environmental and Social Impact Assessment
EMA	Environmental Management Act
EMS	Environmental Management System
ESMP	Environmental and Social Management Plan
I&AP	Interested and affected parties
PPE	Personnel Protective Equipment

## 1. INTRODUCTION

### 1.1. PROJECT BACKGROUND

This Operational Environment and Social Management Plan (Operations-ESMP) has been written assuming construction is complete and the project is moving into the operational phase.

Upon completion of the construction phase of the Walvis Bay Waterfront, the project will move into the operational phase. The project site is located at the north end of Esplanade Drive on the east side of the mouth of Walvis Bay Lagoon, west of the town centre, see Figure 1. The project is a mixture of both marine and land based developments, providing the following components, as illustrated in Figure 2:

- Community and sporting facilities – swimming pool, tennis and jukskei courts (located at the Jan Wilken sporting stadium), and cricket grounds (located in Kuisebmond);
- A marina and water canals for leisure craft moorings;
- Public open outdoor spaces;
- An amphitheatre;
- A multipurpose business and conference centre;
- Offices;
- Residential units;
- Two hotels;
- Serviced apartments (managed by the hotel);
- Restaurants;
- Retail space area;
- Parking bays;
- Internal road and pedestrian access routes; and
- Upgrade of existing road intersections.

The cricket ground in Kuisebmond shall be managed by the municipality and the sporting facilities at Jan Wilken shall be managed under the current management arrangements, therefore these facilities are not within the scope of this operations of the Waterfront development and therefore are managed independently to the operational phase and are outside the scope of this report.

The components within the waterfront site shall be leased or purchased by companies and businesses or individuals. The role of Walvis Bay Waterfront Properties (Pty) Ltd is discussed in Section 2.1.

The commencement of operations of the project will be undertaken in two phases: the western side of the development site shall be constructed and thus become operational first. This part of the development includes the marina, hotel and hospitality facilities, residential, commercial and retail spaces, and a conference centre. The second phase is the eastern side of the project, which comprises of residential, hotel and hospitality facilities and a portion of the inner marina (canal). Both phases are illustrated in Figure 2.



Figure 1 - Project location

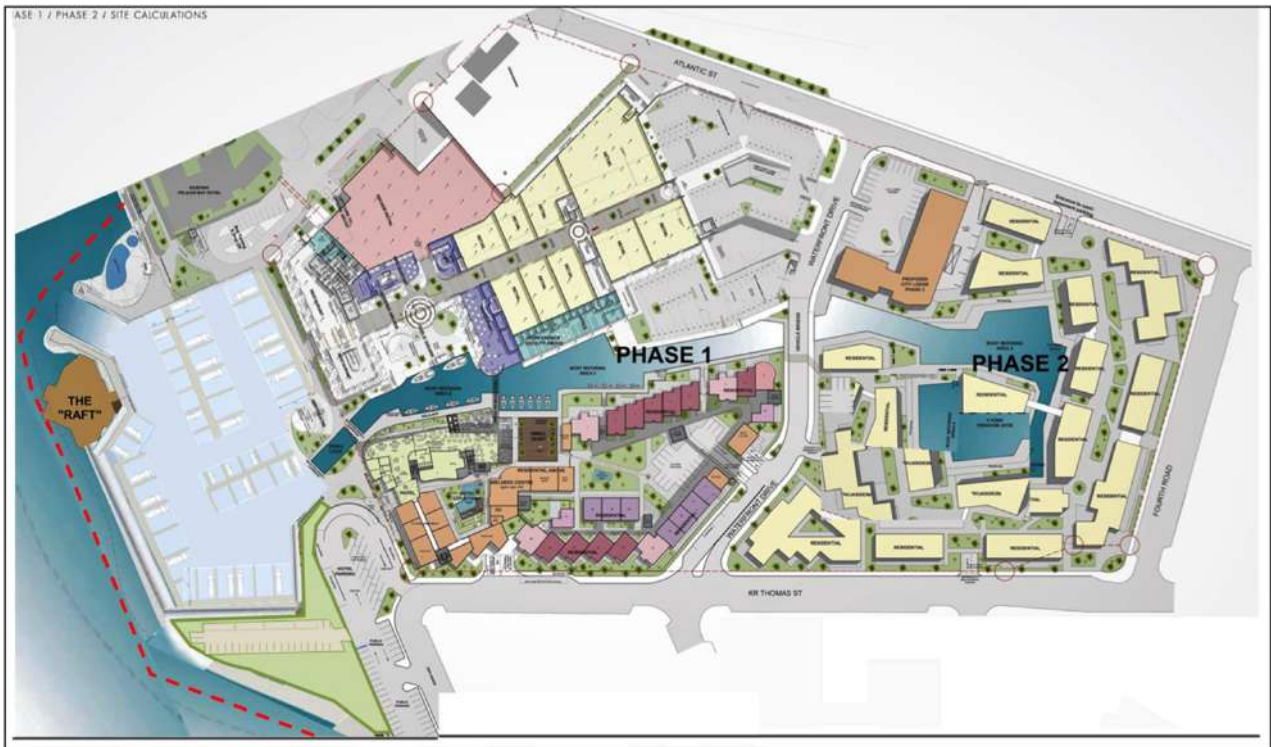


Figure 2 -Layout

## 1.2. ENVIRONMENTAL REGULATORY REQUIREMENTS

The project is considered as a Listed Activity as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) gazetted under the Environmental Management Act, (EMA), 2007 (Act No. 7 of 2007) (referred to herein as the EIA Regulations). As a Listed Activity an application for an Environmental Clearance Certificate is required. An Environmental and Social Impact Assessment (ESIA) report and Environmental and Social Management Plan (ESMP) are required as part of the Environmental Clearance Certificate application, as well as to support the decision-making process. This report presents part of the ESMP (see Section 1.3) and has been undertaken in accordance with the requirements of the Environmental Management Act, 2007 and associated Regulations.

## 1.3. PURPOSE OF THIS REPORT

The series of ESMP are tools to be used by the proponent to ensure potential environment and social impacts and risk are managed. The ESMP for the project is a series of three documents, one for each phase of the project:

- Site Preparation and Construction (Titled: Construction – ESMP)
- Operations ESMP Operations (Titled: Operations – ESMP)
- Decommissioning and Reinstatement (Titled: Decommissioning –ESMP)

By having individual ESMPs specific to phases, the application of the plan and the management of environmental risks shall be more effective and easier to implement. **This report is the ESMP for the Operational phase of the project.**

The purpose of this Operations-ESMP is to provide a management framework for the identification of the management and control of activities with environmental aspects and key risks. It describes how activities will be controlled so that potential environmental and social impacts of the project are prevented and minimised as far as reasonable practicable, and that statutory requirements and other legal obligations are fulfilled. This Operations-ESMP also presents protocols and procedures, roles and responsibilities to ensure the management arrangements are appropriately and effectively implemented.

This Operations-ESMP forms an appendix to the ESIA report; therefore, the ESIA report should be referred to for further information on the operations of the project, assessment methodology, applicable legislation and assessment findings. This report is a live document and shall be reviewed at predetermined intervals, and/or updated when the scope of works alters, or when further data / information can be added. All personal working on the project will be legally required to comply with the standards set out in this Operations ESMPs.

## 1.4. MANAGEMENT OF THIS OPERATIONS ESMP

Walvis Bay Waterfront Properties (Pty) Ltd (the proponent) will hold the Environmental Clearance Certificate for the development and will be responsible for the implementation and management of this Operations-ESMP.

Prior to the completion and sign-off of the construction works for either Phase 1 or Phase 2 and thus the project transitioning into the operational phase, this Operations-ESMP shall be reviewed, amended as required and approved ready for implementation.

The implementation and management of this Operations-ESMP and thus the monitoring of compliance shall be undertaken through daily duties and activities, weekly and monthly inspections (see Sections 2, 4 and 5). Regular meetings between designated roles and parties shall occur (see Sections 3.2 and 3.3) to ensure that any environmental issues, lessons learnt or required amendments to this Operations-ESMP is appropriately reported and recorded. The findings of these meetings shall be taken forward and considered during the annual review. This formal annual review shall occur every year from the day of implementation and a summary report shall be produced.



The following shall be considered during the review:

- The review shall include an evaluation of the operations effectiveness of implementing this Operations-ESMP, of environmental procedures, processes, forms, checklists and any other documents;
- The summary report shall include a review of all review findings, including the independent review (Refer to Section 9.2);
- The review shall include an evaluation of environmental incidents and community complaints, and actions taken to rectify or address these events; and
- This Operations-ESMP shall be amended as required based on the outcomes of the review.

This Operations-ESMP shall be circulated to all tenants / owners of the development components, and shall be made available on the proponent's website.

A list of required supporting plans, registers or documents are provided in Annex A.

## 1.5. LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THE OPERATIONS ESMP

This Operations-ESMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in a site-specific health and safety plan.

Where there is any conflict between the provisions of this Operations-ESMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines and relevant laws), the contract and statutory requirements are to take precedence.

The information contained in this Operations-ESMP has been based on the project description as provided in the ESIA report. Where the design or operational methods alter, this Operations-ESMP may require updating and potential further assessment undertaken.

## 1.6. ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared the ESMPs on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. ECC is independent to the proponent and has no vested or financial interest in the project.

## 1.7. STRUCTURE OF THIS OPERATIONS ESMP

The following structure has been adopted for this Report:

- Chapter 1 – Introduction
- Chapter 2 – Project Management and Personnel
- Chapter 3 – Training and Communications
- Chapter 4 – Reporting, Compliance and Enforcement
- Chapter 5 – Operational Environmental Management
- Chapter 6 – Register of Environmental Risks and Issues
- Annex A – Document Checklist
- Annex B – Contact Details
- Annex C – Template for Waste Management Plan
- Annex D – Monitoring Plan

## 2. PROJECT MANAGEMENT AND PERSONNEL

### 2.1. WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD

The proponent will be the management company, which will hold the Environmental Clearance Certificate and therefore shall be responsible for the implementation and management of this Operations-ESMP across the project.

The project will have various components, such as offices, residential units, hotels, serviced apartments and restaurants. These will either be leased or sold. The proponent is responsible for the following:

- Managing Walvis Bay Waterfront Properties (Pty) Ltd and all personnel, including contractors;
- Managing leased properties and the distribution of profits;
- Managing the development's waste management system, maintaining the central waste and recycling facility, and managing/co-ordinating all waste collection and disposal;
- Care and maintenance of the Outer Marina and Inner Marina, including dredging, flushing of the Inner Marina and regular monitoring;
- Ensuring all occupants (boats) and users of the Marina comply with rules and regulations;
- Managing rental and levy finances for all occupants of the project;
- Undertaking regular communications with updates, news or other information to all occupants and the community;
- Undertaking cleaning, upkeep and maintenance of open areas;
- Undertaking maintenance of utilities and services for all leased or owned buildings;
- Managing and maintaining the interiors of all leased buildings; and
- Managing and maintaining the exterior of all buildings.

The proponent is also responsible for ensuring all tenants / owners, whether being businesses, companies or individuals, demonstrate compliance with this Operations-ESMP. The day-to-day operations of businesses and companies that lease / own components of the project will not be managed by the proponent, for example the operations of a restaurant shall be managed by the business owner or appointed managers. Contractual arrangements with tenants / owners shall stipulate compliance with this Operations-ESMP, therefore they have a duty to comply with this Operations-ESMP and the proponent has a responsibility to monitor their compliance.

### 2.2. ORGANISATIONAL STRUCTURE, PERSONNEL ROLES AND RESPONSIBILITIES

The proponent shall be responsible for:

- Ensuring all members of the company and any sub-contractors comply with the procedures set out in this Operations-ESMP
- Ensuring that all persons are provided with sufficient training, supervision and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Companies and businesses leasing / owning components on the project site shall be responsible for ensuring and demonstrating that each employee is compliant with this Operations-ESMP, as listed above. All companies and businesses shall provide monthly updates to the Environment and Social Manager.

The key personnel and environmental responsibilities of each role during the operations are summarised in **Error! Not a valid bookmark self-reference.**. The contact details of key personnel shall be recorded in Annex B. This register shall be displayed on site and shall be reviewed and updated regularly to ensure all details are correct.

**Table 1 – Key Roles and Responsibilities**

ROLE	RESPONSIBILITIES
Walvis Bay Waterfront Properties (Pty) Ltd Management Team	<ul style="list-style-type: none"> <li>- Overall responsibility for the implementation and management of this Operations-ESMP.</li> <li>- Ensure Environmental Policy is communicated throughout the project.</li> <li>- Responsible for providing the required resources to complete the required tasks and to facilitate company corporate support. Resources being financial, technical and includes external resources.</li> </ul>
Operational Manager	<ul style="list-style-type: none"> <li>- Overall responsible for the implementation and management of this Operations-ESMP.</li> <li>- Overall responsibility for ensuring environmental impacts are minimised and environmental obligations set out in this Operations-ESMP are met.</li> <li>- Responsible for delivery of operational activities including routine and non-routine maintenance works.</li> <li>- Responsible for ensuring the commitments, including annual revisions of this Operations-ESMP are met.</li> <li>- Ensure inductions and training for all personnel employed by the proponent, including contractors, and all companies and businesses owning /leasing project components are completed in accordance with this Operations-ESMP.</li> <li>- Main interface with authorities, including reporting any incidents.</li> <li>- Maintains a register of all tenants / owners, with contact details, nature of business, number of employees and any specific environmental issues or risks.</li> <li>- Review Plant and Equipment Registers and Plant and Equipment Registers held by any companies or businesses leasing/owning components on the project site.</li> </ul>
Environment and Social Manager	<ul style="list-style-type: none"> <li>- Reports to the Operations Manager.</li> <li>- The principal point of advice in relation to the environmental performance of the project.</li> <li>- Provides advise to the proponent, and companies and businesses leasing / owning components on compliance obligations against all matters specified in the conditions of the Environmental Compliance Certificate and within this Operations-ESMP.</li> <li>- Responsible for the management, maintenance and revisions of this Operations-ESMP and subsequent environmental plans (e.g. Waste Management Plan).</li> <li>- Oversee the implementation of all environmental management plans and monitoring programs required under the environmental compliance certificate.</li> <li>- Ensure that environmental auditing is undertaken in accordance with all relevant project Environmental Management Systems</li> <li>- Be given the authority and independence to require reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be</li> </ul>

ROLE	RESPONSIBILITIES
	<p>ceased immediately should an adverse impact on the environment be likely to occur.</p> <ul style="list-style-type: none"> <li>- Reports incidents to Operations Manager.</li> <li>- Conduct and maintain records of training and inductions to employees and contractors on this Operations-ESMP.</li> <li>- Undertakes monthly reviews and collates compliance reports from all tenants / owners.</li> <li>- Responsible for implementing the environmental monitoring programme developed by the independent consultant below.</li> <li>- Maintain the community issues and concern register keep records of complaints and delegated and report to management as required.</li> <li>- Maintains environmental site records.</li> </ul>
Operational Site Supervisor(s)	<ul style="list-style-type: none"> <li>- Reports to the Operations Manager.</li> <li>- Implement this Operations-ESMP and ensures all activities, including maintenance activities (set out in Section 5) are undertaken in accordance with this Operations-ESMP.</li> <li>- Reporting of environmental incidents to the Operations Manager.</li> <li>- Ensure management measures relating to performance are maintained.</li> <li>- Responsible for ensuring any subcontractors engaged in relation to the development are inducted and activities comply with this Operations-ESMP.</li> <li>- Identifies all environmental and safety risks associated with maintenance works and produces any required Method Statements.</li> <li>- Oversees specific maintenance activities to ensure environmental risks are minimised.</li> <li>- Maintains environmental site records.</li> </ul>
Walvis Bay Waterfront Properties (Pty) Ltd Operations Team (Personnel)	<ul style="list-style-type: none"> <li>- All personnel to comply with this Operations-ESMP and to minimise impacts to the environment.</li> <li>- Ensuring they have undertaken a site induction and are conversant with the requirements of this Operations-ESMP.</li> <li>- Ensuring appropriate briefings for certain activities have been provided and fully understood.</li> <li>- Reporting of any operations and conditions that deviate from this Operations-ESMP or any non-compliant issues or accidents to the Operations Site Supervisor or Operations Manager.</li> </ul>
Independent Environmental Consultants / Nominated expert	<ul style="list-style-type: none"> <li>- Provide specialist input and advice on environmental matters.</li> <li>- Conduct independent monthly audits during operations as and when required.</li> <li>- Conduct annual audit of compliance for submission to authorities.</li> <li>- Design and assist in implementing monitoring programs.</li> <li>- Undertake surveys and inspections.</li> <li>- Preparation of environmental reports as and when required.</li> <li>- Ensure environmental impacts are minimised and environmental obligations are met.</li> <li>- Report any activity that has resulted, or has the potential to result in an environmental incident.</li> </ul>

ROLE	RESPONSIBILITIES
Companies and Businesses (Tenants / Owners)	<ul style="list-style-type: none"> <li>- Comply with this Operations-ESMP.</li> <li>- Reporting of environmental incidents to the Environment and Social Manager</li> <li>- Ensure environmental impacts are minimised and environmental obligations are met.</li> <li>- Provide monthly compliance reports to the Environmental and Social Manager.</li> <li>- Ensure all personnel have undertaken a site induction provided by the proponent.</li> <li>- Ensure all personnel are suitable qualified and/or experienced to undertake their role.</li> <li>- All personnel to comply with this Operations-ESMP and to minimise impacts to the environment.</li> <li>- Nominated individuals to attend monthly meetings with the proponent.</li> </ul>

### 2.3. CONTRACTORS

Any contractors hired to perform duties for the proponent shall be compliant with this Operations ESMP, and would be responsible for the following:

- Undertaking activities in accordance with this Operations ESMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements;
- Implementing appropriate environmental management measures;
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the Operational Manager or Environmental and Social Manager; and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

### 2.4. EMPLOYMENT

The proponent and all companies and businesses leasing / owning components shall comply with the requirements of the Republic of Namibia Regulations for Labour, Health and Safety, and any amendments to these regulations. During operations, the following shall be complied with:

- In liaison with local government and community authorities the Contractor shall ensure that local people have access to information about job opportunities and are considered first for contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and qualifications.
- The maximum length of time the job is likely to last for shall be clearly indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired; and
- Every effort shall be made to recruit from the pool of unemployed workers living in Walvis Bay.

Additional employment principals shall be developed and included to this Operations-ESMP to ensure a robust employment policy is implemented across the project.

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## 3. TRAINING AND COMMUNICATIONS

### 3.1. TRAINING AND AWARENESS

To ensure the operations of the project minimise potential environment and social impacts, and implement best practice and effective environment and social management, all personnel and subcontractors employed by the proponent as well as by all companies and businesses leasing / owning components within the project shall receive suitable training. All personnel across the project shall be required to attend a site induction upon commencement of employment and shall include the following:

- This Operations-ESMP and its intended purpose, including its relationship to and method of use;
- A general induction that outlines:
  - o What is meant by “environment” and “social”;
  - o Why the environment and community needs to be protected;
  - o How operational activities can impact on the environment and community;
  - o What can be done to mitigate against such impacts;
- Site environment and social objectives and targets;
- Understanding individual roles and responsibilities;
- The environmental impacts and social responsibilities associated with the inductee’s working activities;
- Site environment and social rules;
- Understanding their legal obligations and the potential consequences of non-compliance with this Operations-ESMP and relevant statutory requirements;
- Details of how to deal with, and who to contact for environment or community events or issues should they occur; and
- Emergency procedures and responses, including an outline of the environment and social Incident Management Procedure.

All site staff will be appropriately qualified and trained for the specific role they are to undertake. Training records shall be kept and maintained, and held by each company and business, including the proponent. New recruits and training undertaken shall be reported to the proponent monthly. The proponent shall maintain a record of reports and shall highlight any issues regarding personnel training through the monthly compliance reviews.

Personnel performing tasks that may cause environmental impacts shall have appropriate education, training and/or experience. Method Statements and Risk Assessments will be conducted prior to high risk jobs or projects and shall involve sign off and involvement of the Environmental and Social Manager. Ad hoc Tool Box talks shall be undertaken as and when required to provide updates to personnel across the project, for example on any newly identified environmental issues or lessons learnt.

### 3.2. COMMUNICATIONS: WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD

The proponent’s Management Team shall undertake regular meetings such as progress meetings or monthly update meetings, which shall include but not be limited to the following items to ensure environmental management during operations is maintained:

- Recent training undertaken;
- Recent inspections, audits and any non-conformance;
- Any lessons learnt and alterations to this Operations-ESMP;

- Complaints received;
- Visits by external bodies and the outcome or feedback from such visits; and
- Objective / target achievement, including reporting on environmental performance.

Minutes from these meetings will be taken, and key environmental information will be cascaded to all personnel in the company through Tool Box talks and through notices.

Where necessary, separate meetings with contractors will be held as and when necessary to ensure the following:

- Appropriate training has been provided to personnel (in line with Section 3.1); and
- Any additional specific training for the job at hand.

### 3.3. COMMUNICATIONS: TENANTS/OWNERS

At times it will be necessary to communicate and cascade environment and social information to the companies and businesses leasing/ owning a component on the project to ensure environmental compliance is maintained, updates are provided, and any lessons are learnt from. As part of the management duties, the proponent's Management Team will cascade environmental information through the following means:

- Monthly meetings to be attended by nominated representatives from all businesses and companies;
- Email;
- Newsletters;
- Meetings; and
- Notices.
- Social media (what's app group for example)

This Operations-ESMP will be published on ECC website and the proponent's website so that it can be accessed at all times.

### 3.4. COMMUNICATIONS: EXTERNAL

#### 3.4.1. COMMUNITY

The design of the project has taken into consideration community feedback and where possible has designed out potential impacts, for example setting of the buildings and layout of development. Risk of impacts occurring still remains, as the existing environment will alter as a result of the project, thereby affecting the local community, for example, increase in traffic levels and thus noise levels, and change in landscape character. The Management Team shall ensure that regular communication with the local communities and stakeholders are undertaken to minimise impacts on the environment and community, and potential complaints are minimised. This shall be undertaken by way of forums (to be held quarterly), local newsletters, leaflets, newspaper advertisements, and community notice boards to include information such as:

- Upcoming events;
- Accidents or emergencies;
- Major changes to the development;
- Any major works that may impact the community; and
- Community what's app group
- Environmental forums on a quarterly basis

The environmental forum shall involve a range of stakeholders, including government, local authority, neighbours, and provide them with a platform where issues and concerns can be raised. It will also provide an opportunity for the proponent to present monitoring results; learn and understand community interests and concerns; openly discuss issues, feedback and comments; and encourage interactive working between the proponent and community.

The proponent shall also prepare and circulate an annual community newsletter providing an overview of the past year and performance against environment and social objectives.

The Environmental and Social Manager shall co-ordinate community engagement as well as manage any complaints (see Section 3.5).

#### 3.4.2. TOURISTS AND VISITORS

The project shall provide land based and marine facilities for both the community and tourists. Providing environmental information to the public is part of the developments philosophy, in particular, regular monitoring of the marine environment will be undertaken and presented in the form of education notice boards which shall be updated on a regular basis.

#### 3.4.3. OTHER STAKEHOLDERS

During operations, continual engagement with external stakeholders shall be undertaken to ensure the impacts on the environment are minimised. Communication may take the form of scheduled meetings, telephonic calls and written correspondence. The key stakeholders who will be communicated with include, but are not limited to:

- Walvis Bay Municipality;
- The Namibian Dolphin Project;
- Ministry of Environment and Tourism;
- Ministry of Fisheries, Marine and Resources; and
- NAMPORT.

Any agreed monitoring will be shared through reports, with any recommendations to be actioned agreed with the Management Team.

### 3.5. COMPLAINTS HANDLING AND RECORDING

Complaints shall be directed to a dedicated email address and nominated phone number, the details of which shall be circulated to the local community and displayed on notice boards. Any complaints received verbally by any personnel on the project site shall be recorded by the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of complaint. The information shall be given to the Environmental and Social Manager who is overall responsible for the management of complaints, and will provide a written response to the complainant. Any complaints regarding customer satisfaction for services provided by companies and businesses shall be handled directly with the relevant company and business.

The Environment and Social Manager shall maintain a complaint's register that will detail the name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover. Records of all complaints shall be kept for at least four years after the complaint was made.

The Environmental and Social Manager together with the Operations Manager shall be responsible for the nominating the correct personnel to resolve the issue and co-ordinate resolution. All complainants shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.



The Operational Manager shall inform the Municipality of this complaints register; its location and the person responsible to ensure that local community or the general public are aware and know about the complaints register.

Personnel shall be informed about the complaints register, its location and the person responsible, in order to forward to him/her any resident or the general public who wishes to lodge a complaint.

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## 4. REPORTING, COMPLIANCE AND ENFORCEMENT

### 4.1. ENVIRONMENTAL MANAGEMENT SYSTEM

An Environmental Management System (EMS) shall be implemented across the project and all components shall operate in accordance with the EMS. Once the EMS has been set up, and relevant details, specifications or requirements shall be added to this Operations-ESMP.

### 4.2. ENVIRONMENTAL PERFORMANCE MANAGEMENT

#### 4.2.1. SUMMARY OF ENVIRONMENTAL RISKS AND MITIGATION MEASURES

Chapter 6 provides a Register of Environmental Risks and Issues, which identifies mitigation and monitoring measures, as well as roles responsible. This register will be subject to regular review by the Environmental and Social Manager together with the Operations Manager, and updated when necessary.

This register will be used to undertake monthly inspections by the Environmental and Social Manager (see next section) to ensure the project is compliant with this Operations-ESMP.

#### 4.2.2. ENVIRONMENTAL INSPECTIONS & COMPLIANCE MONITORING

##### 4.2.2.1. DAILY COMPLIANCE MONITORING

A copy of this Operations-ESMP will be available to all personnel through the proponent's web site, as well as hard copy held by each company and business operating on the project site.

All personnel shall comply with this Operations-ESMP through their daily roles and any activities undertaken. Any environmental problems or risks identified shall be notified and reported to a nominated role in all companies and businesses operating on the project site, or if working for the proponent, directly to the Operations Site Supervisor. Any environmental problems or risks shall be cascaded to the proponent's Operations Manager, and shall be actioned as soon as is reasonably practicable.

##### 4.2.2.2. MONTHLY COMPLIANCE MONITORING

Monthly compliance inspections shall be undertaken by the Environmental and Social Manager, who shall check that the standards and procedures set out in this Operations-ESMP are being complied with and pollution control measures are in place and working correctly across the project (including all tenants / owners).

Monthly Compliance Reports shall be produced by the Environmental and Social Manager, which shall include a summary of compliance provided by each component on the project. The report shall contain a brief description of any areas of non-conformance with the contract specification, the reason for the non-conformance; the responsible party, the result (consequence), the corrective action taken and any necessary follow up measures required. Monthly Compliance Reports shall feed into the annual review, to ensure this Operations-ESMP is appropriate for use.

A register of documents shall be produced and maintained by the proponent, for example the required permits or approvals, and registers, documents and plans (Annex A provides an initial list of requirements prior to operations commence). This checklist shall be used to ensure compliance with this Operations-ESMP, and shall be updated particularly with any required Method Statements. It shall also be used as a log to record when documents are reviewed and updated.

##### 4.2.2.3. INSPECTION OF PLANT AND EQUIPMENT

All plant and equipment performing an environmental function shall be well maintained and serviced in line with their specification. A register of all plant and equipment under the responsibility of the proponent or companies and businesses shall be maintained by the Operations Manager or designated roles, respectively. This register shall be

reviewed monthly to ensure all checks and services for plant and equipment have been undertaken. The register shall include, but not limited to the following:

- Piece of plant and equipment;
- Make and Model;
- Frequency of required service and scheduled dates;
- Dates of last inspection, maintenance and/or test;
- Notes of any issues or concerns; and
- Responsible person.

#### 4.2.2.4. ANNUAL COMPLIANCE MONITORING

An independent annual audit shall be undertaken to review operations and compliance over the last 12 months. All monthly reports (from all companies, businesses and the proponent) shall be reviewed, identifying any trends or significant areas of concern, as well as measures implemented to manage / resolve the environment or social issue. All complaints or comments and actions taken shall be reviewed. Compliance and legislative changes shall be reviewed, and lessons learnt shall be captured. This Operations-ESMP shall be amended as required, and follow up training, awareness or updates shall be provided across the project.

### 4.3. REPORTING

Whilst the proponent will not manage all operations on the site, there will be a requirement to ensure that any incident is reported to the proponent’s Management Team. In the event of any environmental issue, failure of plant and equipment that perform an environmental function or accident, the reporting structure presented in Figure 3.

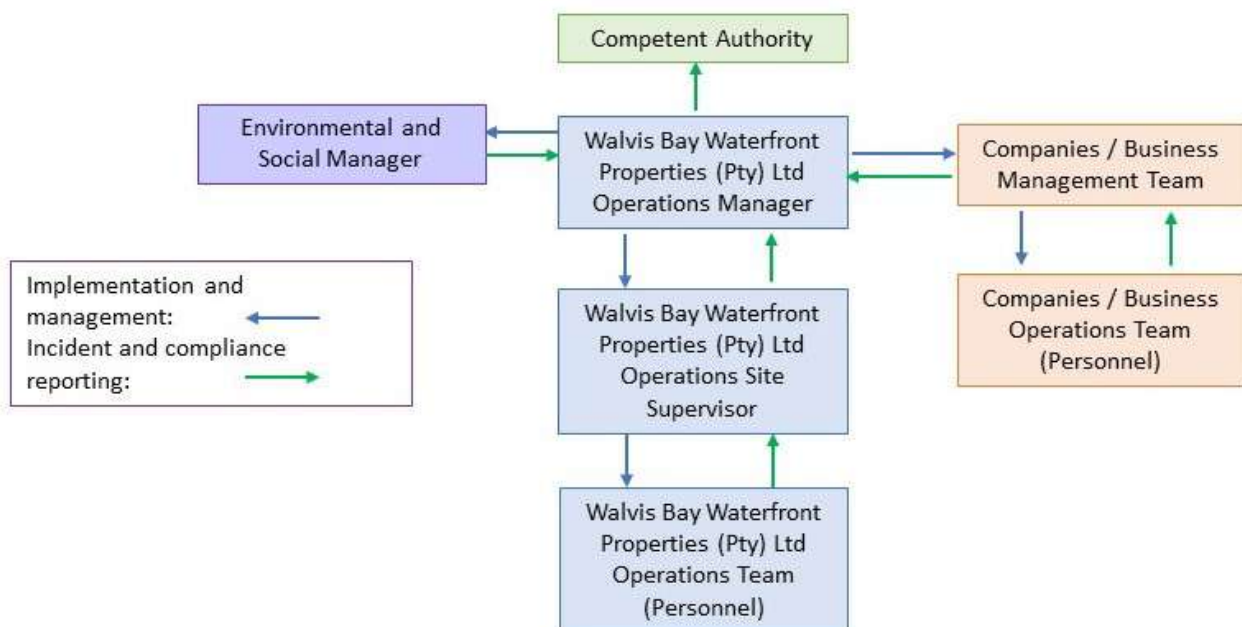


Figure 3 – Reporting Structure overview

## 4.4. NON-COMPLIANCE

### 4.4.1. NON-COMPLIANCE EVENT

The proponent and all companies and businesses operating on the project site shall ensure that this Operations-ESMP is fully complied with by its personnel and contractors. Where it has been identified that works are not compliant with this Operations-ESMP, the corrective actions shall be employed immediately so that the works return to being compliant as soon as possible.

Non-compliance is considered as for example:

- Evidence of contravention of this Operations-ESMP and associated indicators;
- Personnel as having failed to comply with corrective or other instructions issued by the Operational Manager or qualified authority; or
- Complaints from the public having not being responded to.

### 4.4.2. DISCIPLINARY ACTION

This Operations-ESMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties;
- Legal action;
- Monetary penalties imposed by the proponent on the contractor;
- Withdrawal of license/s; and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extend of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

## 5. OPERATIONAL ENVIRONMENTAL MANAGEMENT

### 5.1. OBJECTIVES AND TARGETS

Environmental objectives for the operations of the project are as follows:

- Zero pollution incidents;
- Minimise waste sent to landfill or being burnt;
- Minimise disruption to residents (and therefore complaints); and
- Protect marine biodiversity.

Procedures for monitoring operational processes against the project environmental objectives will be by the Environmental and Social Manager. Monitoring measures are summarised in Section 5.9

### 5.2. METHOD STATEMENTS AND RISK ASSESSMENTS

Method Statements and Risk Assessments shall be produced by the Operations Manager (or nominated individual) for specific high-risk activities during the operations and maintenance of the project, and shall include environmental protection and mitigation measures, as well as emergency preparedness appropriate to the activity covered.

Method Statements shall be produced for a range of activities, including, but not limited to:

- Dredging of the Access Channel and Marina (see Section 5.5.1);
- Maintenance and cleaning of the Inner Marina (see Section 5.5.2); and
- Dredged waste material handling and off-site removal.

The list of Method Statements, and in particular ones required for routine and non-routine (but scheduled activities) should be listed in the document register (Annex A) and shall be reviewed annually.

### 5.3. MARINA OPERATIONS

Approximately 70 boats are expected to be moored in the Marina. These boats will be of various sizes and will be restricted in size to those the Marina has been designed to cater for; this will include leisure yachts and small recreational boats.

Boat operators using the marina will fall under the management of the proponent and therefore the proponent shall enforce strict rules and regulations for boat operators and users of the marina.

Education and notice boards shall be positioned around the Marina, displaying information regarding the code of conduct, rules and regulations of the Marina and other guidance to ensure impacts on the environment are minimised. This shall include but not limited to:

- No littering;
- No feeding of wild animals;
- Speed limits;
- No-go areas including the Lagoon;
- Compliance to Namport's nautical safety requirements;
- Compliance to National Water Safety rules and regulations;
- Safety requirements;
- No mooring outside of the Marina;
- Shut down of fish finding and boat sonar equipment; and
- Rules regarding the use and limited use of lights on masks in the Marina.

Boats will only be permitted to use the Access Channel for entry and exit; this will be demarcated by buoys and access will be speed limit restricted.

Outside of the Marina and Access Channel, the proponent will have limited control over the boats users and their activities, however the proponent will reiterate that all users shall adhere to the following:

- Remain within areas approved for boat use and avoid restricted areas, including the Lagoon;
- Boats within the Bay area will fall under the regulations of Namport and all nautical safety requirements must be complied with, including national laws pertaining to boat use.
- A "Code of Conduct" will be drawn up and in place prior to operations setting out the rules and regulations of the Marina use.

#### 5.4. ROUTINE MAINTENANCE

Routine maintenance shall occur monthly during the life of the project and will be managed by the Operations Manager or Operations Site Supervisor. Routine maintenance could include activities such as:

- Utilities and services;
- Open areas and landscaping;
- Cleaning and repairs or outdoor areas and marina area;
- Drainage, stormwater controls and erosion management;
- Residential properties and serviced apartments;
- Internal roads and parking areas;

As part of routine maintenance, a Routine Maintenance Environmental Checklist shall be used as a guide when undertaking checks, as it shall set out all plant and equipment that perform and environmental function, what the function is and how they should perform, and mitigation measures that shall be applied to minimise impacts prior to undertaking maintenance activities. This checklist shall be consistent with the Plant and Equipment Register as discussed in Section 4.2.2.3, which shall be updated once checks are completed.

All plant and equipment, including infrastructure such as drains performing and environmental function should be well maintained and serviced as and when required.

This checklist shall be reviewed regularly and revised accordingly to ensure all plant and equipment, and any activities are recorded along with any environmental issues identified. It shall be filed in the EMS and immediate corrective actions shall be undertaken where practical. The completed checklist shall be reviewed by the Operations Manager or nominated role (for companies and businesses) that will provide advice and direction any other actions as appropriate. Every month, the Operations Manager shall review Plant and Equipment Registers and Plant and Equipment Registers held by any companies or businesses leasing/owning components on the project site.

In all instances the principals included in this Operations-ESMP shall be followed where applicable to manage anticipated environmental impacts from such activities.

#### 5.5. NON-ROUTINE MAINTENANCE WORKS

Non-routine maintenance will be required during the operations of the project. The key ones that may impact the environment are dredging the Access Channel and Marina, and the draining and cleaning of the Inner Marina.

Prior to any non-routine maintenance works, all contractors and personnel shall have appropriate environmental training and awareness and a Method Statement shall be produced and issued, with the approval of the Environmental and Social Manager and Operations Manager. Prior notice shall be provided to local residents through

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notice boards or other means described in Section 3.4. Any equipment brought onto site will be fit for purpose, well maintained and regularly serviced.

#### 5.5.1. DREDGING ACTIVITIES

The Access Channel and Marina will require Operational Maintenance Dredging every two and five years respectively. A specialised contractor shall be commissioned to undertake the work and Mr Alan Louw (or his nominated representative) shall be present to oversee the works. The contractor shall produce a Method Statement, which will be approved by the Environmental and Social Manager and Operational Manager. The Method Statement shall include measures to avoid and minimise impacts, and set out any monitoring requirements, which shall include, but not limited to the following:

- Provide early notice to users of the marina, local residents and businesses in line with the communications strategy (see Section 3.4);
- Dredging works to be undertaken on the outgoing tide and to avoid strong trade winds;
- Limit activities to the specified area, schedule and for the planned durations;
- Engage the Namibian Dolphin Project to conduct Hydrophone monitoring prior to and during dredging activities to determine presence of animals;
- Provide early notice to the Namibian Mariculture Association and to all the commercial shellfish farmers in Walvis Bay;
- Do not undertake activities until marine mammals have left the area;
- Ensure a Marine Mammal Observer is available to observe and identify presence of animals prior to works and to cease works if dolphins are within the predetermined safe zones;
- Ensure Mr Alan Louw or his appointed representative is present to oversee all dredging activities;
- Use soft-start and ramp-up operations; and
- Maintain and clean all plant and equipment used in the marine environment.

The management of surface water run-off and activities next to the sea shall be defined within the Method Statement.

#### 5.5.2. INNER MARINA MAINTENANCE

The Inner Marina will require draining and cleaning as and when required, which is expected to be between every two to five years. A contractor will be commissioned to undertake the work, who will produce a Method Statement which will be approved by the Environmental and Social Manager and Operational Manager. The Method Statement shall include but not limited to the following:

- Provide prior notice to users of the marina, local residents and businesses in line with the communications strategy;
- Ensure any solid waste is collected prior to the Inner Marina being drained;
- Inform and liaise with local authorities regarding the upcoming works, incorporate any imposed conditions into activity;
- Sample and analyse the water to ensure it is of a quality to drain to the marine environment; and
- Conduct monitoring and inspections throughout the process

### 5.5.3. OTHER

Other non-routine maintenance may include:

- Civil works to correct failures/deficiencies in the road network, drainage or other infrastructure
- Electrical works, including trenching, re-cabling and testing
- Structural works
- Maintenance such as replacing infrastructure, washing, painting, welding etc.

In all instances the principals included in the Operation-ESMP shall be followed where applicable to manage anticipated environmental impacts from such activities. Additional environmental management measures for non-routine maintenance works may be required, and a Method Statement may be required for high-risk activities. The Environmental and Social Manager and Operational Manager shall determine when Method Statements are required.

## 5.6. SOLID WASTE MANAGEMENT

The EMA (2007), Section 3, paragraph (i) states that waste must be reduced, re-used and recycled where possible, therefore in accordance with the Act, waste generated on site shall be managed and dealt with in accordance with a Waste Management Plan. This Plan will be produced prior to the operations phase commencing and shall include the following information:

- Describe each waste type expected to be produced;
- Estimate the quantity of each waste type;
- Identify the waste management action proposed for each waste stream, including re-using, recycling, recovery and disposal;
- Designated areas to collect and separate waste; and
- Identify waste carrier and waste Disposal Company.

A draft Waste Management Plan template is provided in Annex C. The aim of the Waste Management Plan is to achieve sustainable waste management. Their main purpose is to outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. In addition, it will also outline any potential economical and investment requirements for the treatment and / or disposal of waste.

The Waste Management Plan shall be updated by the Environmental and Social Manager annually (at the same time as the annual review as discussed in Section 4.2.2.4) to ensure all waste and disposal route is identified and waste hierarchy applied where possible. Input from all companies and businesses leasing or owning components on the project site shall be required, which shall be provided through the annual review (see Section 4.2.2.4).

The following waste management measures shall be followed:

- Waste will be collected, separated and stored in a designated area which will be appropriately fenced and signposted to keep out unauthorised people and animals;
- Waste collection containers will be of an appropriate design to ensure that no waste can escape, and will be labelled with waste type (e.g. wood, metals, building rubble, garden waste, domestic waste);
- Waste storage areas shall be kept clean and tidy at all times;
- Bins shall be emptied regularly to avoid pests and bad odours; and
- No burning will be allowed on site.



Any hazardous material and wastes (including medical waste, if necessary) shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. Hazardous and non-hazardous waste shall be stored separately at all times.

## 5.7. MATERIAL MANAGEMENT: DREDGED MATERIAL

Maintenance dredging activities shall occur approximately every five and two years for the Access Channel and Marine, respectively. As stated in the ESIA report, at the time of writing the preferred site to move this material to has not been identified, and four options remain. The preferred option shall be identified prior to the project entering the operational phase, and this Operations ESMP shall be amended to set out the preferred option.

A Method Statement shall be produced for this activity, which shall set out measures that minimise potential impacts on the marine environment.

## 5.8. RISKS TO THE MARINE ENVIRONMENT

In addition to the maintenance dredging and draining activities, there is potential for the marine environment to be affected through the operations of the project, for example, through:

- Increased boats activities in the mouth of the Lagoon and Bay area, increasing in noise and vibration levels, and human interactions with marine animals;
- Maintenance activities within or adjacent to the marine environment;
- Site drainage and spread of contamination or silty waters;
- Increased noise levels from users of the marina and project site;
- Increased risk of pollution events and litter entering the marine environment; and
- Increased light.

Prior to operations, the Operations Manager shall produce a Rules and Regulations Manual for users of the Marina, setting out rules and codes of conduct for all boat users, operators and owners, other users of the marina and marine environment, and tourists and the general public enjoying the Marina area. This document shall be circulated to all Marina users prior to activities being undertaken, and key rules and codes of conduct shall be publicised on notice boards throughout the development, for example, no littering; speed restrictions and demarcation of restricted areas for boats; no feeding wild animals; and no maintenance work in certain areas.

## 5.9. ENVIRONMENTAL MONITORING

Monitoring during operations shall be undertaken to ensure the impacts on society and the environment are minimised and to evaluate how effective the environmental management has been, over an extended period of time. A detailed environment and social monitoring plan is attached as Annex D.

## 5.10. POLLUTION CONTROL AND CONTINGENCY PLAN

### 5.10.1. STORAGE OF FUELS, OILS AND CHEMICALS

Where fuels, oils or chemicals are stored on the project site, the following should be applied:

- Fuel storage tanks should be sited in a location specified and approved by the Operations Manager and should be enclosed with a security fence with a lockable gate;
- Any fuel tank or container should be on a flat area, at least 100m from residential properties and the sea;
- The container shall be stored on an impervious base, be bunded and capable of containing at least 110% of the total capacity of the storage container;

- The bund should be made of impermeable material;
- Signs indicating 'no smoking' 'no naked flames' and 'danger' will be provided in appropriate languages, and will conform to a recognised standard and national laws;
- The capacity of the tank and the product within the tank shall be displayed using an Emergency System compliance to recognised standard and national laws or similar international code;

#### 5.10.2. HANDLING OF FUEL, OIL AND CHEMICALS

All personnel shall take reasonable precautions to prevent fuel, oil and chemical spills. To this end, the Operations Manager and the Management Team of all companies and businesses shall ensure that:

- All fuel, oil and chemical deliveries will be supervised by a responsible person, who will be trained to deal with any spills;
- All mobile plant shall be refuelled in a designated area on an impermeable surface and away from drains. A spill kit will be at each refuelling point. Where it is impractical to refuel within a bunded area, a drip tray will be available to catch any spills caused by over fuelling;
- Storage tank levels will be checked before delivery to prevent overfilling or delivering the wrong product;
- Daily inspections are performed to verify that no leaking or defective equipment is brought onto site;
- Any oils or lubricants discharged during routine vehicle servicing on site are captured using drip trays, containers or other appropriate containment measures; and
- Equipment is maintained regularly to ensure that no fuel, oil or hydraulic leaks occur.

All vehicles or equipment that are used in close proximity to the sea are cleaned of oil, grease and other contaminants damaging to marine life. Any fuelling or repairs shall be carried out in designated areas more than 100m away from the coastline and shall be supervised by personnel familiar with spill containment and clean up procedures.

The Operations Manager shall ensure that there is sufficient absorbent material and spill kits available on site to manage accidental spills. Spill kits should contain as a minimum, sealed plastic buckets or re-closable plastic bags, pads, socks, safety goggles, gloves, disposal bags and should be clearly marked "Spill Kit". The most appropriate spill kits shall be determined and identified by the Operations Manager, taking into consideration the volume being stored and nature of material.

The location of and instructions on how to use this equipment shall be included in the Site Induction, and nominated personnel shall be appropriately trained to use spill kits. An Environmental Emergency Plan shall be produced prior to operations and shall have detailed instructions on how to respond to spills (see Section 5.12).

Any accidental spillages of fuels and oils, or other hazardous substances, shall be cleaned up immediately and be reported Operations Manager (as per Figure 3). The following responses shall be undertaken:

- Minor spill: Only diesel and oil, with no human injury, contamination to water bodies or other environmental receptors. Contain and clean up the spill using available spill kit. Report to the Operations Manager, supplying the following information:
  - o Date, time, and location;
  - o Substance spilled and quantity; and
  - o Actions taken, and any future remediation required.
- Major Spill: Resulting in human injury or/and environmental contamination and water body contamination. Contain the spill if possible and report the spill to the Operations Manager who shall then alert the

appropriate emergency services (see Table 2). In addition to the above information, the Operations Manager shall also be informed of any immediate dangers, e.g. fire, explosion, release of chemical fumes.

### 5.11. FIRE PREVENTION

All personnel across the project shall take all necessary precautions to prevent the ignition and spread of fires caused either deliberately or accidentally as a result of the work being performed.

The Operations Manager with support from the Management Teams of companies and businesses across the project site shall prepare a Fire Prevention Plan for fire prevention and emergency management, which shall be communicated to all companies and businesses across the project. The Fire Prevention Plan shall include, but shall not be limited to, the following:

- Potential sources of fire risk;
- Procedures to be followed to control an accidental fire;
- Identification and location of fire-fighting equipment that will be maintained on site and deployed in the event of an emergency.

The Site Induction will include a briefing of the risks and potential consequences of starting fires. Personnel shall also be warned of the risks of careless disposal of burning cigarette butts.

Appropriate fire-fighting equipment shall be provided at specified localities across the project site to meet any emergency resulting from a fire. The locations of which shall be provided in the Site Induction.

### 5.12. ENVIRONMENTAL EMERGENCY PLAN

An Environmental Emergency Plan shall be prepared by the Operations Manager, with support from the Environmental and Social Manager, prior to the operational phase and communicated to all companies and businesses, as well as sub-contractors and Emergency Services.

The plan shall incorporate fire and emergency management measures, and pollution incident response management plan requirements. The plan shall identify and concentrate on potential incidents and emergencies that could occur on the project site, and describes the general policy and approach that should be followed when dealing with an emergency or incident, such as fire, explosion, spills and traffic accidents.

The plan shall outline:

- The development, site plans and maps;
- Incident identification and notification process;
- Emergency contact details;
- Emergency response procedures; and
- Training requirements.

A reportable environmental incident is a pollution incident where there is a risk of causing or threatening material harm to the environment. A pollution incident includes a leak, spill or escape of a substance or circumstances where this is likely to occur.

Responsible staff shall be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Operations Manager. Any corrective actions are taken forward for review and approval.

Should an emergency incident occur, the Operations Manager shall be notified immediately, who will call the emergency services and inform the Environmental and Social Manager. The emergency response shall be co-

ordinated by the Operations Manager. A record of the emergency incident shall be kept illustrating the nature of the event and corrective action undertaken. These reports shall be reviewed annual as part of the annual review (see Section 4.2.2.4).

### 5.13. ENVIRONMENTAL EMERGENCY AND RESPONSE CONTACTS

The Operations Manager will be the primary contact person in the event of an environmental emergency. The Operations Manager has the authority and independence to request reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse environmental impact be anticipated.

In the event of an incident that requires the emergency services, the services that should be contacted are listed in Table 2.

**Table 2 - Emergency Services contact telephone numbers**

AMBULANCE	POLICE	FIRE BRIGADE	SEA RESCUE	NAMPORT FIRE AND PORT CONTROL
+264 81 129 3875	+264 64 - 219 000, +264 64 – 219036 064 219 048 219 048	+264 81 122 0833 or 081 122 0888	208 2221 or 081 129 6295	208 2221 or 208 2265

For large-scale spills and other significant environmental incidents, the fire services should be contacted as required and the MET office informed of the incident (telephone +264 61 284 2111). All correspondence with MET should be undertaken by the PM as guided by the Environmental Officer.

For the clean-up of smaller spills, the relevant Material Safety Data Sheet (MSDS) should be obtained online and consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

All environmental incidents, regardless of their size or significance, should be recorded and reported to the Operations Manager.

## 6. REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

### 6.1. INTRODUCTION

An environmental review of the project has been completed to identify all the commitments and agreements made within the ESIA report. From this, a schedule of environmental commitments has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the operations phase.

**Table 3 – Environmental Issues, Mitigation and Monitoring Measures**

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
1	Inefficient or poor maintenance activities	<ul style="list-style-type: none"> <li>- Dirty areas and build-up of rubbish – visual impact and pests or scavengers attracted to the area (scare off lagoon birds).</li> <li>- Damage to buildings.</li> <li>- Puts off visitors – loss of income.</li> <li>- Inefficient or failure of plant and equipment performing an environmental function – loss of containment, pollution event, inefficient energy use.</li> </ul>	<ul style="list-style-type: none"> <li>- Daily duties of trained responsible personnel.</li> <li>- Suitable qualified personnel and appropriate tools and equipment.</li> <li>- Weekly and monthly inspections.</li> <li>- Application of methods identified in the Routine Maintenance Environmental Checklist.</li> </ul>	<ul style="list-style-type: none"> <li>- Weekly and monthly inspections.</li> <li>- Complete the Routine Maintenance Environmental Checklist</li> <li>- Update the Plant and Equipment Register as required.</li> </ul>	<ul style="list-style-type: none"> <li>- During maintenance activities and once complete to sign off work.</li> <li>- Monthly inspections.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Operations Supervisor</li> <li>- Operations Manager</li> <li>- Nominated personnel for each company and business.</li> </ul>
2.1	Routine Maintenance: Landscaping and open spaces	<ul style="list-style-type: none"> <li>- Overgrowth of vegetation – visual unpleasing.</li> <li>- Poor maintenance leading to visual impacts, introduction of invasive species and loss of visitors to the development</li> </ul>	<ul style="list-style-type: none"> <li>- Ensure all trees and vegetation has established/reinstated</li> <li>- Keep areas clean at all times, bins shall be emptied daily</li> <li>- Daily sweeping of areas</li> <li>- Control weeds and pests</li> <li>- No invasive species or non-native species to be introduced onto the development.</li> <li>- Application of methods identified in the Routine Maintenance Environmental</li> </ul>	<ul style="list-style-type: none"> <li>- Visual inspections by the Site Operations Supervisor.</li> <li>- Work undertaken in line with the Routine Maintenance Environmental Checklist and update the Plant and Equipment Register as required.</li> </ul>	<ul style="list-style-type: none"> <li>- During maintenance activities and once complete to sign off work.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Operations Supervisor</li> <li>- Operations Manager</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			Checklist.			
2.2	Routine Maintenance: General Activities	<ul style="list-style-type: none"> <li>Loss of containment through spills of chemicals, oils or fuels being used – contaminated ground, Inner Marina or Outer Marina.</li> </ul>	<ul style="list-style-type: none"> <li>Suitable qualified personnel and appropriate tools and equipment.</li> <li>Application of methods identified in the Routine Maintenance Environmental Checklist.</li> </ul>	<ul style="list-style-type: none"> <li>Inspections of the work.</li> <li>Work undertaken in line with the Routine Maintenance Environmental Checklist and update the Plant and Equipment Register as required.</li> </ul>	<ul style="list-style-type: none"> <li>During maintenance activities and once complete</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor</li> <li>Operations Manager</li> <li>Nominated personnel for each company and business.</li> </ul>
3	Failure of plant and equipment performing an environmental function	<ul style="list-style-type: none"> <li>Various, for example loss of containment (storage containers); insufficient filtering/treatment of liquid effluent entering marine environment; poor drainage leading to siltation.</li> </ul>	<ul style="list-style-type: none"> <li>Undertake prescribed care and maintenance and servicing of plant and equipment in line with the Plant and Equipment Register and Routine Maintenance Environmental Checklist.</li> <li>Suitable qualified personnel undertaking the work and implementation of and adherence to reporting structure.</li> </ul>	<ul style="list-style-type: none"> <li>Regular inspections of plant and equipment in line with the Plant and Equipment Register and Routine Maintenance Environmental Checklist</li> </ul>	<ul style="list-style-type: none"> <li>Weekly</li> <li>Monthly</li> <li>Annually</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor</li> <li>Operations Manager</li> <li>Environmental and Social Manager</li> </ul>
4.1	Non-routine maintenance works: Operational Maintenance	<ul style="list-style-type: none"> <li>Increase suspended solids: reduce water quality, affect aquatic life (fish move away from area, causing dolphins and other mammals to move away)</li> </ul>	<ul style="list-style-type: none"> <li>Undertake activities on outgoing tide only</li> <li>Limit works during certain conditions, e.g. when trade winds are strong</li> </ul>	<ul style="list-style-type: none"> <li>Mr Louw and Site Operations Supervisor to oversee all works</li> <li>Liaise with the</li> </ul>	<ul style="list-style-type: none"> <li>Daily checks</li> <li>Regular Water quality monitoring</li> <li>Throughout</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor</li> <li>Site Manager</li> <li>Environmental and Social</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
	Dredging	<ul style="list-style-type: none"> <li>and reduce sunlight in water column</li> <li>– Indirect impacts to bird life</li> </ul>	<ul style="list-style-type: none"> <li>– Mr Alan Louw to oversee dredging activities</li> <li>– Suitably qualified and experienced personnel</li> <li>– Use soft-starts and ramp up operations</li> <li>– Avoid dredging between June and September</li> <li>– Follow works in line with the Method Statement</li> </ul>	<ul style="list-style-type: none"> <li>Dolphin Project prior to and during works who will undertake hydrophone monitoring</li> <li>– Conduct sampling and routine turbidity and water quality monitoring</li> <li>– Avian monitoring</li> </ul>	dredging works (every 2 years)	Manager
4.2	Non-routine maintenance works: Operational Maintenance Dredging  General operations of the site	<ul style="list-style-type: none"> <li>– Increase noise and vibration: marine mammals will avoid areas</li> <li>– Nuisance to local residents, tourists and visitors.</li> </ul>	<ul style="list-style-type: none"> <li>– Use soft-starts and ramp up operations.</li> <li>– Suitably qualified and experienced personnel.</li> <li>– Marine Mammal Observer to observe and identify presence of animals prior to works and to cease works if dolphins are within the predetermined safe zones.</li> <li>– Avoid dredging between June and September</li> <li>– Limit activities to prescribed durations</li> <li>– Provide early notice to users of the marina, local residents and businesses</li> <li>– Follow works in line with the</li> </ul>	<ul style="list-style-type: none"> <li>– Mr Louw and Site Operations Supervisor to oversee all works.</li> <li>– Liaise with the Dolphin Project prior to and during works who will undertake hydrophone monitoring.</li> <li>– Noise monitoring</li> </ul>	<ul style="list-style-type: none"> <li>– Daily checks</li> <li>– Throughout dredging works (every 2 years)</li> <li>– Every dredging occurrence</li> <li>– Annual</li> </ul>	<ul style="list-style-type: none"> <li>– Site Operations Supervisor</li> <li>– Site Manager</li> <li>– Environmental and Social Manager</li> </ul>



REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			Method Statement			
4.3	Non-routine maintenance works: Operational Maintenance Dredging and draining/cleaning of the Inner Marina	<ul style="list-style-type: none"> <li>- Disruption to users of the Marina</li> </ul>	<ul style="list-style-type: none"> <li>- Provide early notice to users of the marina, local residents and businesses.</li> <li>- Follow works in line with the Method Statement.</li> </ul>	<ul style="list-style-type: none"> <li>- When activity occurs</li> </ul>	<ul style="list-style-type: none"> <li>- Throughout dredging works (every 2 years)</li> </ul>	<ul style="list-style-type: none"> <li>- Operations Manager</li> </ul>
4.4	Non-routine maintenance works: Operational Maintenance Dredging	<ul style="list-style-type: none"> <li>- Generation of contaminated dredge material</li> <li>- Disposal of dredged material – land take, potential land contamination.</li> </ul>	<ul style="list-style-type: none"> <li>- Sample dredged material to ensure waste disposal route is appropriate.</li> <li>- Limit dredging to specific areas and during outgoing tides.</li> <li>- Suitably qualified and experienced personnel.</li> <li>- Identify the preferred disposal option and undertake works in line with Method Statement.</li> </ul>	<ul style="list-style-type: none"> <li>- Sampling of material prior to disposal.</li> <li>- Disposal dependent on sample results</li> </ul>	<ul style="list-style-type: none"> <li>- Every dredging occurrence</li> </ul>	<ul style="list-style-type: none"> <li>- Operations Manager</li> </ul>
4.5	Non-routine maintenance works: Operational Maintenance Dredging	<ul style="list-style-type: none"> <li>- Disruption of sea floor causing sulphur eruptions leading to reduced water quality and bad odours</li> <li>- Change in depth.</li> </ul>	<ul style="list-style-type: none"> <li>- Limit dredging to specific areas and during outgoing tides.</li> <li>- Suitably qualified and experienced personnel.</li> </ul>	<ul style="list-style-type: none"> <li>- Visual monitoring</li> <li>- Turbidity monitoring</li> <li>- Routine sediment sampling</li> <li>- Bathymetric survey</li> </ul>	<ul style="list-style-type: none"> <li>- Throughout dredging works (every 2 years)</li> </ul>	<ul style="list-style-type: none"> <li>- Operations Manager</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
4.6	Non-routine maintenance works: Drainage of and cleaning of the Inner Marina.	<ul style="list-style-type: none"> <li>Contamination of the marine environment from fuels, oil, litter</li> </ul>	<ul style="list-style-type: none"> <li>Ensure any solid waste is collected prior to the Inner Marina being drained.</li> <li>Sample the water to ensure it is of a quality to drain to the marine environment.</li> </ul>	<ul style="list-style-type: none"> <li>Regular visual checks prior to and during works</li> <li>Water quality monitoring as per schedule</li> </ul>	<ul style="list-style-type: none"> <li>Throughout operations</li> </ul>	<ul style="list-style-type: none"> <li>Operations Manager</li> </ul>
4.7	Non-routine maintenance works: Operational Maintenance Dredging	<ul style="list-style-type: none"> <li>Direct and indirect impacts to marine mammals and other wildlife (disturbance, injury or mortality)</li> </ul>	<ul style="list-style-type: none"> <li>Observation of the presence of marine environment for mammals and other wildlife in the area. Hold off on any dredging works until wildlife has moved from the area. No human-wildlife interactions.</li> <li>Dredging activities shall be undertaken in winter months, from May to August to minimise impacts on sensitive feeding seasons</li> <li>Marine works will avoid sensitive marine mammal breeding times and should be minimised between June to September.</li> <li>Implement Method Statement</li> </ul>	<ul style="list-style-type: none"> <li>Observation of the presence of marine environment for mammals and other wildlife in the area (by the MMO).</li> <li>Continual liaising with The Dolphin Project.</li> <li>Hydrophone monitoring</li> </ul>	<ul style="list-style-type: none"> <li>Throughout dredging works (every 2 years)</li> </ul>	<ul style="list-style-type: none"> <li>Operations Manager</li> <li>Environmental and Social Manager</li> </ul>
5	Marine Works: Maintenance activities next to or within the	<ul style="list-style-type: none"> <li>Loss of fuel or oil (loss of containment or leaks), contaminating marine environment</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance of vehicles.</li> <li>Spill kits suitable for marine environment to be located near activities, and staff</li> </ul>	<ul style="list-style-type: none"> <li>Regular visual checks during marine works.</li> <li>Daily inspections</li> </ul>	<ul style="list-style-type: none"> <li>Daily - Throughout maintenance works</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor</li> <li>Operations Manager</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
	marine environment.		trained to handle spills. – Maintain and clean all plant and equipment used in the marine environment.			
6	Increased marine traffic (leisure boats)	– Direct and indirect impacts to marine mammals and other wildlife (collisions, noise disturbance, injury or mortality) – Increase risk of pollution events	– Implementation and enforcement of the Marina Rules and Code of Conduct. – Demarcated and no-go areas clearly defined and communicated. – Spill kits around Marina.	– Liaising with users – Continual liaising with The Dolphin Project. – Monthly inspections – Ni-annual mock emergency response drills	– Continuous – Bi-Annual	– Operations Manager – Environmental and Social Manager
7.1	Generation of waste	– Loss and inefficient use of resources. – Land use (through landfill), air pollution (through burning). – Increase use of resources through transport.	– Application of the waste hierarchy and compliance with the Waste Management Plan. – Avoid and reduce packaging and other materials purchased, applying pressure on suppliers. – Training and awareness across teams. – Implementation and enforcement of the Marina Rules and Code of Conduct.	– Through daily roles of personnel – Monthly compliance checks.	– Daily – Monthly	– Operations Manager – Environmental and Social Manager – All personnel
7.2	Management of central waste area	– Visual impact. – Risk of odours, pests and scavenger birds.	– Waste to be collected, separated and stored in an appropriately fenced and signposted designated area.	– Routine daily checks. – Monthly Inspections. – Avian Monitoring	– Daily – Monthly	– Site Operations Supervisor – Environmental Officer/Operation

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			<ul style="list-style-type: none"> <li>- Waste collection containers will be of an appropriate design and labelled with waste type (e.g. wood, metals, building rubble, garden waste, domestic waste).</li> <li>- Waste storage areas kept clean and tidy at all times.</li> <li>- Waste to be separated at source where possible</li> </ul>			Manager <ul style="list-style-type: none"> <li>- All personnel</li> </ul>
7.3	Project site littering	<ul style="list-style-type: none"> <li>- Litter entering the marine environment: entangling animals, suffocating animals, animals consuming litter.</li> <li>- Visual impact.</li> <li>- Risk of odours, pests and scavenger birds (disturbs natural lagoon birds).</li> </ul>	<ul style="list-style-type: none"> <li>- Good site housekeeping.</li> <li>- Bins on and surrounding the site, which are regularly emptied.</li> <li>- Nominated person to undertake litter picking regularly.</li> <li>- Avoid food waste being thrown into the environment.</li> <li>- Clear No Littering signs around the project site.</li> <li>- Implementation and enforcement of the Marina Rules and Code of Conduct.</li> </ul>	<ul style="list-style-type: none"> <li>- Routine daily checks.</li> <li>- Monthly Inspections.</li> <li>- Avian monitoring</li> </ul>	<ul style="list-style-type: none"> <li>- Daily</li> <li>- Monthly</li> </ul>	<ul style="list-style-type: none"> <li>- Site Operations Supervisor</li> <li>- Environmental Officer/Operation Manager</li> <li>- All personnel</li> </ul>
8	Increase lights	<ul style="list-style-type: none"> <li>- Impacts to birds (alter feeding grounds and food availability, and distraction and collision risks leading to injury or</li> </ul>	<ul style="list-style-type: none"> <li>- Reduce lights as much as possible, and ensure lights are turned off when not in use.</li> </ul>	<ul style="list-style-type: none"> <li>- Routine daily checks.</li> <li>- Monthly Inspections.</li> </ul>	<ul style="list-style-type: none"> <li>- Daily</li> <li>- Monthly</li> </ul>	<ul style="list-style-type: none"> <li>- Site Operations Supervisor / nominated personnel within</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		mortality). – Local resident’s amenity impacted.	– Regular maintenance to check lights perform to design standards (e.g. pointed down, energy efficiency light bulbs). – Continual stakeholder engagement.			all companies and businesses. – Environmental Officer/Operation Manager – All personnel
9.1	Storage of fuel and oils	– Loss of containment, causing ground contamination and potentially entering the marine environment	– Licence and certificate to store and dispense fuel. – Stored in a lockable area, on a flat impermeable area, with a bund that is capable of storing 110% of stored capacity. – Libelled tanks and containers. – Any hazardous chemicals, liquids or materials to be stored on site to be in suitable storage containers, in lockable store with appropriate bunding, with an inventory. – Appropriate safety signs around storage area, e.g. no smoking. – Appropriate PPE to personnel. – Site Induction and appropriate training of	– Daily and weekly site inspections and production of monthly compliance report. – Tanks and containers to be checked daily. – Monthly Inspections.	– Daily – Monthly	– Site Operations Supervisor / nominated personnel within all companies and businesses. – Environmental Officer/Operation Manager – All personnel

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			nominated persons.			
9.2	Delivery of fuel and oil	<ul style="list-style-type: none"> <li>Loss of containment, causing ground contamination and potential risk to the marine environment.</li> </ul>	<ul style="list-style-type: none"> <li>All deliveries to be supervised.</li> <li>Refuel in designated area, on impermeable surface away from drains, residential properties and the sea. Spill kits to be located at nominated locations around site.</li> <li>Drip trays used where required.</li> <li>Storage tanks to be checked prior to delivery (level and correct tank).</li> <li>Regular checks and servicing of storage containers and regular maintenance and servicing of plant and equipment.</li> <li>Good house-keeping – clean vehicles regularly.</li> <li>Spill kits to be located around site.</li> <li>Site Induction and appropriate training of nominated persons.</li> </ul>	<ul style="list-style-type: none"> <li>Daily and weekly site inspections and production of monthly compliance report.</li> <li>Audits of vehicles to ensure maintained and not defective.</li> <li>Checks and reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor / nominated personnel within all companies and businesses.</li> <li>Environmental Officer/Operations Manager</li> <li>All personnel</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
9.3	Use and maintenance of plant and equipment: Spills of fuels, oils or chemicals	<ul style="list-style-type: none"> <li>Loss of containment, causing localised ground contamination</li> </ul>	<ul style="list-style-type: none"> <li>Spill kits in designated areas around site.</li> <li>Contain and clean up spill in accordance with emergency procedures.</li> <li>Report spill as soon as possible.</li> <li>All plant and material to be well maintained and have appropriate containment (drip trays).</li> <li>Maintenance activities of large plant and equipment shall be undertaken off site.</li> <li>Site Induction and appropriate training of nominated persons.</li> <li>Implementation of Environmental Emergency Plan.</li> <li>Suitable PPE and equipment when handling hazardous chemicals, liquids and materials.</li> </ul>	<ul style="list-style-type: none"> <li>Daily and weekly site inspections and production of monthly compliance report.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Operations Supervisor / nominated personnel within all companies and businesses.</li> <li>Environmental Officer/Operations Manager</li> <li>All personnel</li> </ul>
10	General activities: Energy use	<ul style="list-style-type: none"> <li>Use of resources</li> </ul>	<ul style="list-style-type: none"> <li>Turn off plant and equipment when not in use.</li> <li>Regular maintenance of plant and equipment.</li> <li>Minimise / optimise</li> </ul>	<ul style="list-style-type: none"> <li>Scheduled maintenance (Routine Maintenance Environmental</li> </ul>	<ul style="list-style-type: none"> <li>As and when scheduled.</li> </ul>	<ul style="list-style-type: none"> <li>Operations Manager</li> </ul>

REF NO.	ACTIVITY	POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			workforce travel. – Source materials locally. – Source sustainable material and products where possible. – Apply waste hierarchy and reuse and recycle.	Checklist)		
11	General activities: Material use	– Use of resources	– Source materials locally to reduce transportation. – Source sustainable material and products where possible. – Apply waste hierarchy and reuse and recycle material where possible	– In daily duties of specific roles	– Ongoing	– Operations Manager / nominated personnel within all companies and businesses.
12	General Operations: Increase in road traffic	– Increase noise levels – Increase dust deposition	– Quarterly forums – Early notice of events – Good house-keeping and sweeping of local roads	– Noise monitoring – Dust monitoring	– Annual – Daily	– Operations Manager



## **7. IMPLEMENTATION OF THE OPERATIONS-ESMP**

This Operational-ESMP:

- A. Has been prepared pursuant to a contract with the proponent;
- B. Has been prepared on the basis of information provided to ECC up to January 2018;
- C. Is for the sole use of the proponent, for the sole purpose of an ESMP;
- D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an ESMP; and
- E. Must not be copied without the prior written permission of ECC.

ECC has prepared this ESMP on the basis of information provided by the proponent, specialist reports and the ESIA. These have been independently reviewed and verified by the Southern African Institute of Environmental Assessment (SAIEA).



## Operation – ESMP Annexes

Walvis Bay Waterfront Pty Ltd

PREPARED FOR



March 2018

DOCUMENT FOR GOVERNMENT APPROVAL

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## Contents

ANNEX A: DOCUMENT CHECK LIST .....	3
ANNEX B: TEMPLATE CONTACT DETAILS .....	5
ANNEX C: TEMPLATE WASTE MANAGEMENT PLAN .....	6
INTRODUCTION .....	6
PRINCIPALS .....	6
WASTE MANAGEMENT ARRANGEMENTS .....	6
WASTE GENERATED .....	7
ANNEX D: MONITORING PLAN .....	8

## ANNEX A: DOCUMENT CHECK LIST

DOCUMENT	PURPOSE	OWNER
Tenants / Owners Register	To provide an up to date list of all businesses and companies leasing or owning a component on the development site. To include contact details, nature of business, number of employees, any specific environmental issues or risks related to their operations and any notes on compliance with the Operations ESMP.	Operations Manager
Complaints Register	Name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover.	Environmental and Social Manager
Monthly Compliance Report	The report shall contain a brief description of any areas of non-conformance with the contract specification, the reason for the non-conformance, the responsible party, the result (consequence), the corrective action taken and any necessary follow up measures required.	Environmental and Social Manager
Plant and Equipment Register	Piece of plant and equipment; Make and Model; Frequency of required service and scheduled dates; Dates of last maintenance and test; and Notes of any issues or concerns.	Operations Manager
Routine Maintenance Environmental Checklist	Used as a guide when undertaking check as it shall set out all plant and equipment that perform and environmental function, what the function is and how they should perform, and mitigation measures that shall be applied to minimise impacts prior to undertaking maintenance activities.	Operations Manager
Rules and Regulations Manual	Sets rules that all users of the marina should abide by. -	Operations Manager
Environmental Emergency Plan	The plan shall incorporate fire and emergency management measures, and pollution incident response management plan requirements. The plan shall identify and concentrate on potential incidents and emergencies that could occur on the proposed project site, and describes the general policy and approach that should be followed when dealing with an emergency or incident, such as fire, explosion and traffic accidents.	Operations Manager
Waste Management Plan	Outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. Outline any potential economical and investment requirements for the treatment and / or disposal of waste.	Environment and Social Manager
Fire Prevention Plan	fire and emergency management measures, and pollution incident response management plan requirements. Identify	Operations Manager

DOCUMENT	PURPOSE	OWNER
	<p>and concentrate on potential incidents and emergencies that could occur on the proposed project site, and describes the general policy and approach that should be followed when dealing with an emergency or incident, such as fire, explosion, spills and traffic accidents.</p> <ul style="list-style-type: none"> <li>- The development, site plans and maps;</li> <li>- Incident identification and notification process;</li> <li>- Emergency contact details;</li> <li>- Emergency response procedures; and</li> <li>- Training requirements.</li> </ul>	

## ANNEX B: TEMPLATE CONTACT DETAILS

ROLE	NAME	CONTACT DETAILS
Project Manager		
Site Manager		
Environment and Social Manager		
Ministry of Environment and Tourism		
Ministry of Fisheries and Marine Resource		
Namibian Dolphin Project		
Namport		
Walvis Bay Ambulance		
Walvis Bay Police		
Walvis Bay Sea Rescue		
Namport fire and port control		

## ANNEX C: TEMPLATE WASTE MANAGEMENT PLAN

### INTRODUCTION

The aim of this Waste Management Plan is to achieve sustainable waste management. The main purpose is to outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. In addition, it also outlines any potential economical and investment requirements for the treatment and / or disposal of waste.

This Waste Management Plan is a live document and should be updated during the annual review, which is undertaken by the Operational Manager and Environmental and Social Manager.

### PRINCIPALS

The following principles should be applied to the management of waste on site:

- The waste hierarchy (avoid, reuse, recycle, recovery, disposal) should be applied for each waste stream, so that the impact on the environment is reduced as much as possible;
- Waste collection area will be identified prior to operational phase being commissioned, and demarcated and secured with appropriate fencing;
- Bins shall be emptied on a regular basis to avoid pests and bad odours;

**Table 1 – Waste Management Roles**

ROLE	INDIVIDUAL OR PARTY
Proponent	
Contractor	
Responsible person for the Waste Management Plan	

The following waste management measures shall be followed:

- Waste will be collected, separated and stored in a designated area which will be appropriately fenced and signposted to keep out unauthorised people and animals;
- Waste collection containers will be of an appropriate design to ensure that no waste can escape, and will be labelled with waste type (e.g. wood, metals, building rubble, garden waste, domestic waste);
- Waste storage areas shall be kept clean and tidy at all times;
- Bins shall be emptied regularly to avoid pests and bad odours; and
- No burning will be allowed on site.

Any hazardous material and wastes (including medical waste, if necessary) shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. Hazardous and non-hazardous waste shall be stored separately at all times.

### WASTE MANAGEMENT ARRANGEMENTS

The project shall have a dedicated waste collection, sorting and pickup area. This area will be fenced off, clearly signposted and access shall be by those authorised.

The following information shall be provided in this section:

- Location plan of the dedicated area
- Arrangements to appropriately secure and designate the area (fencing, locked gate)
- Access arrangements
- Drainage arrangements
- Set up of the site
- Authorised personnel
- Any rules or codes of conduct

## WASTE GENERATED

Provide all waste streams, type and quantity, allowing a review to be undertaken and the most appropriate waste disposal options are identified.

**Table 2 – Waste Type and Management**

WASTE TYPE	ESTIMATED QUANTITY	WASTE MANAGEMENT	WASTE CARRIER INFORMATION AND SITE
Vegetation	(example only) 40 palm trees Other bushes and vegetation	Recover, store and replant palm trees Other bushes etc. give away to community or compost	Company Name: Phone No. xxx xxx xxxxx
Packaging and plastic			
Excavated material (onshore)			
Dredged Material			



## ANNEX D: MONITORING PLAN

Item	Rationale	Monitoring Area / Site Description / Details	Frequency	Phase (Construction, Operations, Decommissioning, or All)	Parameters	Quality Control Point
Potential impacts from dredging activities.	<p>Dredging has the potential to smother the seafloor habitat by increase sedimentation.</p> <p>Release of heavy metals can have serious cumulative negative impacts on the marine environment.</p> <p>Release of hydrogen sulphide can cause varying degrees of anoxia resulting in mortalities of marine organisms.</p> <p>Bad odours can also arise as a result of the release of hydrogen sulphide</p>	<p>A. Turbidity &amp; general chemistry of water (sampling and analysis) –Immediately next to the Marina, including the access channel</p> <p>B. Sediment samples – project site, access channel and lagoon entrance</p>	<p>A. Quarterly and during dredging activities</p> <p>B. Before dredging commencing; Post dredging samples also to be collected; and quarterly.</p>	<p>A. All</p> <p>B. Operations</p>	<p>A. Turbidity &amp; general chemistry of water</p> <p>B. Chemical composition including heavy metals</p>	<p>A. Yes</p> <p>B. Yes</p>

Bathymetric survey	Analysis of the sea floor to determine potential impacts of siltation	Lagoon – survey area used for the ESIA plus area south of the project	Annual	All	Elevations of water level	Yes
Cetacean Monitoring - Hydrophone monitoring	To monitor the movements of dolphin movements in and out of the Lagoon  Hydrophones are used to detect dolphin use and changes in use of the Lagoon environment during activities compared to before and after impact	Located near the Raft restaurant (use existing Namibian Dolphin Project monitoring site)	Continuous	All	Hydrophone digital waveform characterisation to select clicks and logs the time, centre frequency, intensity and bandwidth of each cetacean click	Yes
Cetacean Monitoring – Marine Mammal Observation (MMO) monitoring	To monitor the movements of dolphin in and out of the Lagoon during dredging activities	Lagoon area and Mouth of the Lagoon	The MMO should  1) Conduct a survey of the entire Lagoon from the Salt Works to the mouth of the Lagoon daily, prior to any dredging or pile driving, to determine the presence and location of animals in	All - Before and during dredging activities	Visual MMO  (Dolphins are not in the lagoon before dredging or pile driving occurs and  b) not within 1000m of either activity when they are	Yes

			the Lagoon and  2) Keep constant watch during these activities to ensure animals are not approaching into the Lagoon near these activities when they are occurring.		occurring)	
Avian Monitoring	Disturbance of feeding and roosting shorebirds particularly flamingos by human activity. Participate in bi annual bird counts to determine bird use of the Lagoon and Ramsar area	Ramsar Site	Bi Annual	All	Participate in bi annual bird counts coordinated by Mr Peter Bridgeford.	No
Potable Water (supplied by municipality)	To determine suitability of water for drinking	TBD – Source on site	Annual	Construction and Operations	Potable drinking water suite	No
Noise	Noise monitoring to determine impact of development on residents and surrounds	Specific locations to be determined by a noise specialist. Expected to be along KR Thomas Street, Atlantic Street and 4 <sup>th</sup> Road.	A. Quarterly  B. Annual	A. Prior to construction commencing and during construction  B. Operations	dB	No

<p>Potential pollution from boats</p>	<p>Monitor and control all boat users of the marina, prohibit boat users entering the Lagoon.</p> <p>Oils or chemicals resulting from accidental spills during refuelling, collisions, cleaning pose a serious threat to the ecological function of the Lagoon including seabirds.</p>	<p>Ensure spill contingency plan is in place:</p> <p>A. Containment boom and spill kits to be on site</p> <p>B. Mock emergency response drills conducted</p>	<p>A. Inspected Monthly</p> <p>B. Bi annual</p>	<p>All</p>	<p>Visual and inspections</p>	<p>No</p>
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# Decommissioning - Environmental and Social Management Plan

Walvis Bay Waterfront Pty Ltd

PREPARED FOR



March 2018

ECC DOCUMENT CONTROL: ECC-41-54-REP-30-A

DOCUMENT FOR GOVERNMENT APPROVAL

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	ECC-41-54-REP-30-A Decommissioning - Environmental and Social Management Plan
<b>Client Name:</b>	Walvis Bay Waterfront Pty Ltd
<b>Ministry Reference:</b>	MET Scope of environmental impact assessment for proposed project of Walvis Bay Waterfront Project, Walvis Bay, Erongo Region
<b>Status of Report:</b>	Document for Government Approval
<b>Date of issue:</b>	16 <sup>th</sup> March 2018
<b>Review Period:</b>	

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## Contents

1.	INTRODUCTION .....	4
1.1.	PROJECT BACKGROUND .....	4
1.2.	ENVIRONMENTAL REGULATORY REQUIREMENTS.....	4
1.3.	PURPOSE OF THIS REPORT .....	4
1.4.	ENVIRONMENTAL CONSULTANCY.....	4
2.	DECOMMISSIONING AND SITE REINSTATEMENT .....	5
2.1.	DECOMMISSIONING AND SITE REINSTATEMENT OBJECTIVES .....	5
2.2.	DETAILED DECOMMISSIONING-ESMP .....	5
2.2.1.	ASSESSMENT OF IMPACTS .....	6
2.2.2.	PROPOSED CONTENT OF THE DECOMMISSIONING-ESMP .....	6
	ANNEX A: DEVELOPMENT OF THE DECOMMISSIONING-ESMP .....	7

## DEFINITIONS AND ABBREVIATIONS

EAP	Environmental Assessment Practitioner
ECC	Environmental Compliance Consultancy
EIA	Environmental Impact Assessment
EMA	Environmental Management Act
EMP	Environmental Management Plan
I&AP	Interested and affected parties

## 1. INTRODUCTION

### 1.1. PROJECT BACKGROUND

This Decommissioning Environment and Social Management Plan (Decommissioning-ESMP) has been written assuming operation is complete and the project moves into a closure phase.

### 1.2. ENVIRONMENTAL REGULATORY REQUIREMENTS

The project is considered as a Listed Activity as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) gazetted under the Environmental Management Act, (EMA), 2007 (Act No. 7 of 2007) (referred to herein as the EIA Regulations). As a Listed Activity an application for an Environmental Clearance Certificate is required. An Environmental and Social Impact Assessment (ESIA) report and Environmental and Social Management Plan (ESMP) are required as part of the Environmental Clearance Certificate application, as well as to support the decision-making process.

### 1.3. PURPOSE OF THIS REPORT

The series of Environment and Social Management Plans (ESMP) are tools to be used by the proponent to ensure potential environment and social impacts and risk are managed. The ESMP for the project is a series of three documents, one for each phase of the project:

- Site Preparation and Construction (Titled: Construction – ESMP)
- Operations ESMP Operations (Titled: Operations – ESMP)
- Decommissioning and Reinstatement (Titled: Decommissioning –ESMP)

By having individual ESMPs specific to phases, the application of the plan and the management of environmental risks shall be more effective and easier to implement.

This report provides a conceptual Decommissioning-ESMP, setting out an overarching environmental management framework and the key objectives of what the detailed Decommissioning-ESMP shall achieve.

The project is planned to be a long-term permanent fixture of the urban landscape of Walvis Bay, it is not intended to be closed or removed in the long term. Care and maintenance will be required during this time, and the potential life time of the development may be extended. There is therefore uncertainty as to when decommissioning will be undertaken, if ever (unless unforeseen closure occurs) and at this stage a conceptual Decommissioning-ESMP is deemed appropriate. A detailed Decommissioning-ESMP will be developed once details of decommissioning and site reinstatement activities are fully understood.

### 1.4. ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared the ESMPs on behalf of the proponent. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa in the public and private sector. ECC is independent to the proponent and has no vested or financial interested in the project.



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## 2. DECOMMISSIONING AND SITE REINSTATEMENT

### 2.1. DECOMMISSIONING AND SITE REINSTATEMENT OBJECTIVES

The project has a life span, which is yet to be finalised. It is assumed that at a certain point, the development will require decommissioning and the site will be reinstated back to its original or similar condition. At this stage in the design development process, the following objectives for the decommissioning and site reinstatement phase have been set. These should be the foundation for which the detailed Decommissioning-ESMP should be developed against.

- Decommissioning schedule, activities and methods, shall be designed to minimise impacts on the environment and society;
- Zero pollution incidents;
- Pollution prevention measures shall be the most appropriate and best available;
- Waste sent to landfill or to be burnt will be avoided and minimised;
- Material will be reclaimed, reused and recycled where practicable;
- The marine environment will be protected;
- Disruption to local residents will be minimised;
- Regular communications with stakeholders and the local community shall be undertaken;
- Appropriate sub-management plans and Method Statements shall be produced to minimise and manage environmental issues;
- The site shall be returned to as close to the original land use and shall blend in with the surrounding environment;
- Legacy issues shall be avoided and minimised; and
- Socio-economic impacts (including loss of employment) shall be minimised through careful planning and preparation for closure, beginning three to five years before closure takes place.

The above objectives will be refined as apart of ongoing detailed decommissioning and reinstatement planning and costing during the life of the development.

### 2.2. DETAILED DECOMMISSIONING-ESMP

A detail Decommissioning-ESMP shall be produced prior to the development entering into the decommissioning and site reinstatement phase. The purpose of the detailed Decommissioning-ESMP shall be to provide a management framework for the identification of the management and control of activities with environmental aspects and key risks. The Decommissioning-ESMP shall provide an overview of how potential decommissioning activities will be controlled so that potential environmental and social impacts of the project are prevented and minimised as far as reasonable practicable, and that statutory requirements and other legal obligations are fulfilled. The Decommissioning-ESMP shall also present protocols and procedures, and roles and responsibilities to ensure the management arrangements are appropriately and effectively implemented.

The Decommissioning-ESMP shall be developed in stages (see Annex A), and will be drafted once the activities and scheduling of the decommissioning and site reinstatement phase is more fully understood.

### 2.2.1. ASSESSMENT OF IMPACTS

This Decommissioning-ESMP forms an appendix to the ESIA report, however decommissioning and site restoration has not been assessed due to the uncertainties around when and how this phase will be undertaken.

### 2.2.2. PROPOSED CONTENT OF THE DECOMMISSIONING-ESMP

The proposed content of the detailed Decommissioning-ESMP shall include the following:

- Aims and objectives of the Decommissioning-ESMP;
- End state to be achieved;
- Overview of how the project will be decommissioned and site reinstated;
- An overview of the environmental and social baseline, focussing on any changes from the baseline detailed in the ESIA report;
- Roles and responsibilities;
- Contractors to be employed and their responsibilities;
- Communications (internally and external);
- Training and awareness;
- How the Decommissioning-ESMP will be enforced and complied with;
- Key activities and environmental management arrangements; and
- Register of environmental risks and issues, mitigation measures and responsible person.

## ANNEX A: DEVELOPMENT OF THE DECOMMISSIONING-ESMP

Level	Type/Stage	Purpose	Elements
1	Preliminary (Implemented for commencement) <b>[CURRENT STAGE]</b>	Approval as part of Environmental Compliance Certificate Application  Integrate decommissioning and broad closure objectives into planning at design stage.	General decommissioning and reinstatement objectives identified.  No closure costing provided.
2	Operational (Implemented in first 3 years of operation)	Integrate closure objectives into site planning and operational expansions.  Describe outstanding decommissioning & rehabilitation work at level of general activities.  Allow for financial provisioning.	As above, plus:  Closure criteria development.  Closure costing based on closure activities and areas (30% confidence) to meet closure criteria.
3	Detailed (Implemented 3 years from estimated site closure)	Describe current outstanding decommissioning & rehabilitation work at level of detailed tasks.  Provide for tender benchmarking.  Revised periodically (annually).	As above, plus:  Assessment of closure criteria  Risk analysis against closure criteria.  Task register for each closure activity prepared.  Decommissioning work schedule drafted.  Preliminary stakeholder consultation implemented.  Costing based on task register (10% confidence).
4	Final (1 year from known site closure)	Describe outstanding work remaining at closure at level of detailed tasks.  Preparation of tender document for closure contractors.	As above, plus:  Detailed decommissioning work schedule completed including specific timeframes.  Detailed risk assessment against closure criteria.  Comprehensive stakeholder consultation program implemented.  Refine closure criteria to align with monitoring results and stakeholder requirements.  Tender documents prepared.



# Construction - Environmental and Social Management Plan

Walvis Bay Waterfront Pty Ltd

PREPARED FOR



March 2018

ECC DOCUMENT CONTROL: ECC-41-54-REP-28-A

DOCUMENT FOR GOVERNMENT APPROVAL

## TITLE AND APPROVAL PAGE

<b>Project Name:</b>	ECC-41-54-REP-28-A Construction - Environmental and Social Management Plan
<b>Client Name:</b>	Walvis Bay Waterfront Pty Ltd
<b>Ministry Reference:</b>	MET Scope of environmental impact assessment for proposed project of Walvis Bay Waterfront Project, Walvis Bay, Erongo Region
<b>Status of Report:</b>	Document for Government Approval
<b>Date of issue:</b>	16 <sup>th</sup> March 2018
<b>Review Period:</b>	

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## Contents

1.	INTRODUCTION .....	6
1.1.	PROJECT BACKGROUND.....	6
1.2.	ENVIRONMENTAL REGULATORY REQUIREMENTS .....	6
1.3.	PURPOSE OF THIS REPORT.....	7
1.4.	MANAGEMENT OF THIS CONSTRUCTION ESMP .....	7
1.5.	LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THIS CONSTRUCTION-ESMP .....	8
1.6.	ENVIRONMENTAL CONSULTANCY .....	8
1.7.	STRUCTURE OF THIS CONSTRUCTION-ESMP.....	8
2.	PROJECT MANAGEMENT AND PERSONNEL .....	9
2.1.	WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD.....	9
2.2.	ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES .....	9
2.3.	CONTRACTORS .....	11
2.4.	EMPLOYMENT .....	12
3.	COMMUNICATIONS AND TRAINING .....	13
3.1.	INTRODUCTION.....	13
3.2.	COMMUNICATIONS: INTERNAL .....	13
3.2.1.	ENVIRONMENTAL COMMUNICATIONS.....	13
3.2.2.	MEETINGS.....	13
3.3.	COMMUNICATIONS: EXTERNAL.....	13
3.3.1.	COMMUNITY .....	13
3.3.2.	OTHER STAKEHOLDERS .....	14
3.4.	COMPLAINTS HANDLING AND RECORDING .....	14
3.5.	TRAINING AND AWARENESS .....	15
3.5.1.	SITE INDUCTION .....	15
3.5.2.	SPECIALIST BRIEFINGS.....	15
4.	REPORTING, COMPLIANCE AND ENFORCEMENT .....	16
4.1.	ENVIRONMENTAL PERMITS .....	16
4.2.	ENVIRONMENTAL PERFORMANCE MANAGEMENT .....	16
4.2.1.	SUMMARY OF ENVIRONMENTAL RISKS AND MITIGATION MEASURES .....	16
4.2.2.	ENVIRONMENTAL INSPECTIONS & COMPLIANCE MONITORING .....	16
4.2.2.1.	DAILY COMPLIANCE MONITORING .....	16
4.2.2.2.	MONTHLY COMPLIANCE MONITORING .....	16
4.2.2.3.	INSPECTION OF PLANT AND EQUIPMENT.....	17
4.2.2.4.	ANNUAL COMPLIANCE MONITORING.....	17
4.3.	REPORTING.....	18
4.3.1.	NON-COMPLIANCE.....	18
4.3.2.	DISCIPLINARY ACTION.....	18
4.4.	CONTROL OF RECORDS.....	19
5.	CONSTRUCTION ENVIRONMENTAL MANAGEMENT .....	20
5.1.	OBJECTIVES AND TARGETS .....	20
5.2.	METHOD STATEMENTS AND RISK ASSESSMENTS .....	20
5.3.	CONSTRUCTION QUALITY CONTROL POINT.....	20
5.4.	PROJECT CLOSE .....	21
5.5.	WORKER CAMPSITE AND MANAGEMENT .....	21
5.6.	ESTABLISHMENT AND MANAGEMENT OF CONSTRUCTION SITE .....	21
5.7.	VEGETATION CLEARANCE AND TOPSOIL AND SUBSOIL STRIP .....	22

---

5.8.	ARCHAEOLOGICAL REMAINS.....	22
5.9.	SOLID WASTE MANAGEMENT .....	23
5.10.	COMMUNITY NUISANCES AND HAZARDS.....	24
5.10.1.	DUST CONTROL.....	24
5.10.2.	NOISE CONTROL.....	24
5.10.3.	PRIVATE MEANS OF ACCESS .....	25
5.11.	CONSTRUCTION TRAFFIC .....	25
5.12.	RISKS TO THE MARINE ENVIRONMENT.....	25
5.13.	ENVIRONMENTAL MONITORING.....	25
5.14.	POLLUTION CONTROL AND CONTINGENCY PLAN.....	26
5.14.1.	SURFACE WATER RUN-OFF, GROUNDWATER AND SILT MANAGEMENT .....	26
5.14.2.	HANDLING AND DISPOSAL OF ASBESTOS.....	26
5.14.3.	STORAGE OF FUELS, OILS AND CHEMICALS.....	26
5.14.4.	HANDLING OF FUEL, OIL AND CHEMICALS.....	26
5.14.5.	CEMENT DELIVERY .....	27
5.15.	FIRE PREVENTION .....	27
5.16.	ENVIRONMENTAL EMERGENCY PLAN .....	28
5.17.	ENVIRONMENTAL EMERGENCY AND RESPONSE CONTACTS .....	28
6.	REGISTER OF ENVIRONMENTAL RISKS AND ISSUES .....	30
6.1.	INTRODUCTION.....	30
7.	IMPLEMENTATION OF THE CONSTRUCTION-ESMP .....	48

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**TABLES**

Table 1 – Key Roles and Responsibilities ..... 9

Table 2 - Emergency Services contact telephone numbers..... 29

Table 3 – Environmental Issues, Mitigation and Monitoring Measures..... 31

**FIGURES**

Figure 1 Proposed project location ..... 6

**DEFINITIONS AND ABBREVIATIONS**

EAP	Environmental Assessment Practitioner
ECC	Environmental Compliance Consultancy
ESIA	Environmental and Social Impact Assessment
EMA	Environmental Management Act
ESMP	Environmental and Social Management Plan
I&AP	Interested and affected parties
PPE	Personnel Protective Equipment
QCPs	Construction quality control points
SAIEA	Southern African Institute of Environmental Assessment



## 1. INTRODUCTION

### 1.1. PROJECT BACKGROUND

Walvis Bay Waterfront Properties (Pty) Ltd, a joint venture between Afrikuumba and the Municipality of Walvis Bay is proposing to construct a waterfront development on the east side of the mouth of Walvis Bay Lagoon, west of the town centre. The Walvis Bay Waterfront proposal (the proposed project) is a mixture of both marine and land based developments, providing new residential, commercial and tourism facilities, as well as a marina and canal.

The land based development is proposed to be developed on two adjoining plots of land to the east of popular Esplanade Drive (the road running parallel to the lagoon). The marine development will utilise land between Esplanade Drive and the coastline (currently the Road Reserve – see Figure 1), and will occupy an off-shore area up to and around The Raft Restaurant (Lagoon Water Area).

The area of land is currently occupied by a cricket oval and club house, swimming pool, tennis and jukskei courts. These sporting facilities will be relocated; the sites are presented in Figure 1. The cricket oval will be relocated to a soccer field surrounded by a residential area in Kuisebmond, and the swimming pool, tennis and jukskei courts will be located to the Jan Wilken site, the central sporting stadium in Walvis Bay located in the centre of town.

Figure 1 Proposed project location



### 1.2. ENVIRONMENTAL REGULATORY REQUIREMENTS

The proposed project is considered as a Listed Activity as set out in the Environmental Management Act, 2007 (Act No. 7 of 2007) and the Environmental Impact Assessment Regulation, 2007 (No. 30 of 2011) gazetted under the Environmental Management Act, (EMA), 2007 (Act No. 7 of 2007) (referred to herein as the EIA Regulations). As a Listed Activity an application for an Environmental Clearance Certificate is required. An Environmental and Social Impact Assessment (ESIA) report and Environmental and Social Management Plan (ESMP) are required as part of the Environmental Clearance Certificate application, as well as to support the decision-making process. This report

presents part of the ESMP (see Section 1.3) and has been undertaken in accordance with the requirements of the Environmental Management Act, 2007 and associated Regulations.

### 1.3. PURPOSE OF THIS REPORT

The series of Environment and Social Management Plans (ESMP) are tools to be used by the proponent to ensure potential environment and social impacts and risk are managed. The ESMP for the project is a series of three documents, one for each phase of the project:

- Site Preparation and Construction (Titled: Construction – ESMP)
- Operations ESMP Operations (Titled: Operations – ESMP)
- Decommissioning and Reinstatement (Titled: Decommissioning –ESMP)

By having individual ESMPs specific to phases, the application of the plan and the management of environmental risks shall be more effective and easier to implement. **This report is the ESMP for the Site Preparation and Construction phase of the proposed project.**

The proposed project has three defined sites, as well as road improvements. This Construction-ESMP is applicable for each site/construction works within the scope of the project.

The purpose of this Construction-ESMP is to provide a management framework for the planning and implementation of construction activities and provides construction standards and operating arrangements so that potential environmental and social impacts of the proposed project are mitigated, prevented and minimised as far as reasonable practicable, and that statutory requirements and other legal obligations are fulfilled. This Construction-ESMP also presents protocols and procedures, and roles and responsibilities to ensure the management arrangements are appropriately and effectively implemented.

This Construction-ESMP forms an appendix to the ESIA report; therefore, the ESIA report should be referred to for further information on the construction of the proposed project, assessment methodology, applicable legislation and assessment findings.

This Construction-ESMP is a live document and shall be reviewed at predetermined intervals, and/or updated when the scope of works alters, or when further data / information can be added. All personal working on the proposed project will be legally required to comply with the standards set out in this Construction-ESMPs.

### 1.4. MANAGEMENT OF THIS CONSTRUCTION ESMP

Walvis Bay Waterfront Properties (Pty) Ltd (the proponent) will hold the Environmental Clearance Certificate for the development and shall be responsible for the implementation and management of this Construction-ESMP.

Prior to the construction works commencing for either Phase 1 or Phase 2, this Construction-ESMP shall be reviewed, amended as required and approved ready for implementation.

The implementation and management of this Construction-ESMP and thus the monitoring of compliance shall be undertaken through daily duties and activities, weekly and monthly inspections (see Sections 2.2 and 4). Regular meetings between designated roles and parties shall occur (see Sections 3.2 and 3.3) to ensure that any environmental issues, lessons learnt or required amendments to this Construction-ESMP is appropriately reported and recorded. The findings of these meetings shall be taken forward and considered during the annual review. This formal annual review shall occur every year from the day of implementation and a summary report shall be produced. The following shall be considered during the review:

- The review shall include an evaluation of the operations effectiveness of implementing this Construction-ESMP, of environmental procedures, processes, forms, checklists and any other documents;

- The summary report shall include a review of all review findings, including the independent review (Refer to Section 4.2.2);
- The review shall include an evaluation of environmental incidents and community complaints, and actions taken to rectify or address these events; and
- This Construction-ESMP shall be amended as required based on the outcomes of the review.

This Construction-ESMP shall be circulated to all contractors and shall be made available on the proponent's website.

A list of required supporting plans, permits, registers or documents are provided in Annex A.

## 1.5. LIMITATIONS, UNCERTAINTIES AND ASSUMPTIONS OF THIS CONSTRUCTION-ESMP

This Construction-ESMP does not include measures for compliance with statutory occupational health and safety requirements. This will be provided in the safety management plan to be developed by the proponent.

Where there is any conflict between the provisions of this Construction-ESMP and any contractor's obligations under their respective contracts, including statutory requirements (such as licences, project approval conditions, permits, standards, guidelines and relevant laws), the contract and statutory requirements are to take precedence.

The information contained in this Construction-ESMP has been based on the project description as provided in the ESIA report. Where the design or construction methods alter, this Construction-ESMP may require updating and potential further assessment undertaken.

## 1.6. ENVIRONMENTAL CONSULTANCY

Environmental Compliance Consultancy (ECC), a Namibian consultancy registration number 2013/11401, has prepared this Construction-ESMP on behalf of Walvis Bay Waterfront Properties (Pty) Ltd. ECC operates exclusively in the environmental, social, health and safety fields for clients across Southern Africa, in the public and private sector. ECC is independent to the proponent and has no vested or financial interest in the proposed project.

## 1.7. STRUCTURE OF THIS CONSTRUCTION-ESMP

The following structure has been adopted for this Report:

- Chapter 1 – Introduction
- Chapter 2 – Project Management and Personnel
- Chapter 3 – Communications and Training
- Chapter 4 – Compliance and Enforcement
- Chapter 5 – General Conduct and Site Management
- Chapter 6 – Register of Environmental Risks and Issues
- Annex A – Document checklist
- Annex B – Contact Details Template
- Annex C – Complaints Register
- Annex D – Daily / Weekly Inspection Report
- Annex E – Monthly Compliance Report
- Annex F – Template Waste Management Plan
- Annex G – Monitoring Plan

## 2. PROJECT MANAGEMENT AND PERSONNEL

### 2.1. WALVIS BAY WATERFRONT PROPERTIES (PTY) LTD

Walvis Bay Waterfront Properties (Pty) Ltd (the proponent) will hold the Environmental Clearance Certificate for the development and shall be responsible for the implementation and management of this Construction-ESMP across the project for the life time of the construction phase. The proponent shall provide a Project Team to oversee and undertake the construction works, which shall be composed of the proponent’s personnel, contractors and consultants.

### 2.2. ORGANISATIONAL STRUCTURE, ROLES AND RESPONSIBILITIES

The proponent shall be responsible for:

- Ensuring all members of the Project Team, including contractors and consultants comply with the procedures set out in this Construction-ESMP
- Ensuring that all persons are provided with sufficient training, supervision and instruction to fulfil this requirement; and
- Ensuring that any persons allocated specific environmental responsibilities are notified of their appointment and confirm that their responsibilities are clearly understood.

Contractors shall be responsible for ensuring and demonstrating that all personnel employed by them are compliant with this Construction-ESMP, as listed above.

The key personnel and environmental responsibilities of each role during the construction works are summarised in Table 1. The contact details of key personnel shall be recorded in Annex A. This register shall be displayed on site and shall be reviewed and updated regularly to ensure all details are correct.

**Table 1 – Key Roles and Responsibilities**

ROLE	RESPONSIBILITY & DUTIES
Walvis Bay Waterfront Properties (Pty) Ltd Management Team	<ul style="list-style-type: none"> <li>- Overall responsibility for the implementation and management of this Construction-ESMP.</li> <li>- Ensure Environmental Policy is communicated throughout the proposed project.</li> <li>- Responsible for providing the required resources to complete the required tasks and to facilitate company corporate support. Resources being financial, technical and includes external resources.</li> </ul>
Project Manager	<ul style="list-style-type: none"> <li>- Appointed by the proponent.</li> <li>- Responsible for overseeing the construction works, day to day activities, and compliance with this Construction-ESMP, in addition:</li> <li>- Ensuring the construction contractor/s are aware of the commitments made in this Construction-ESMP and any other relevant regulatory requirements and that construction will be undertaken in compliance with these;</li> <li>- Ensuring there are adequate resources are made available for implementation of this Construction-ESMP;</li> <li>- Conducting project meetings regularly during the construction period to review actions arising from previous inspections, current status of tasks and schedule of upcoming tasks;</li> <li>- Arranging an independent audit to assess the proponents level of compliance to this Construction-ESMP;</li> </ul>

ROLE	RESPONSIBILITY & DUTIES
	<ul style="list-style-type: none"> <li>- Ensuring all employees and contractors participate in a Site Induction process prior to commencing work on the project;</li> <li>- Maintain up to date register of employees who have completed the Site Induction; and</li> <li>- Report any non-compliance or accidents to the Regulatory Authority.</li> </ul>
<p style="text-align: center;">Environment and Social Manager</p>	<ul style="list-style-type: none"> <li>- Experience in the field and management of large construction projects, the Environment and Social Manager will be appointed by the proponent, who will be available, as required for the following:</li> <li>- Being the principal contact point in relation to environmental performance of the project;</li> <li>- Reporting environmental performance to the Site Manager and PM;</li> <li>- Reports incidents to Project Manager.</li> <li>- Reviewing environmental management content of method statements;</li> <li>- Providing guidance for the site team in dealing with environmental matters, including legal and statutory requirements affecting the works;</li> <li>- Being responsible for all environmental management plans and environmental monitoring, and production of associated reports/records;</li> <li>- Being responsible for providing a response to environment-related complaints received from the public or other stakeholders;</li> <li>- Ensuring that best environmental practice is undertaken throughout the duration of the construction period;</li> <li>- Undertaking routine checks of the construction site and activities;</li> <li>- Provisioning of environmental awareness/management training and inductions;</li> <li>- Timely distribution of any relevant environmental documentation, including revisions to this ESMP, to all construction managers and contractors;</li> <li>- Liaise with specialists such as Mr Louw during piling and dredging operations; and the Namibian Dolphin project.</li> </ul>
<p style="text-align: center;">Site Manager</p>	<p>Appointed to manage the performance of the construction activities and manage any contractors. Responsible for the implementation of this Construction-ESMP and ensuring all construction activities are compliant with this Construction-ESMP, as well as:</p> <ul style="list-style-type: none"> <li>- Overseeing daily onsite activities;</li> <li>- Managing the preparation and implementation of method statements for certain activities, and ensuring the Environment and Social Manager reviews all method statements and the relevant environmental protocols are incorporated;</li> <li>- Reporting any non-compliance or accidents to the PM and Environment and Social Manager;</li> <li>- Ensuring that all staff have attend a site induction session before commencement of any work on site and that they are adequately informed of the requirements of this Construction-ESMP;</li> <li>- Ensuring that all contract workers, sub-contractors and visitors to the site are conversant with the requirements of this ESMP, relevant to their roles on site and adhere to this ESMP at all times; and</li> <li>- Receiving, responding to and recording complaints.</li> </ul>

ROLE	RESPONSIBILITY & DUTIES
Construction workers	Responsible for being compliant with this Construction-ESMP throughout the construction works, in addition to: <ul style="list-style-type: none"> <li>- Ensuring they have undertaken a site induction and are conversant with the requirements of this Construction-ESMP;</li> <li>- Ensuring appropriate briefings for certain activities have been provided and fully understood;</li> <li>- Adherence to this Construction-ESMP at all times; and</li> <li>- Reporting of any operations and conditions that deviate from the Construction-ESMP or any non-compliant issues or accidents to the Environment and Social Manager, and Site Manager.</li> <li>- Ensuring all task and methods statements are signed off by Environment and Social Manager and PM prior to undertaking activities</li> </ul>
Independent Environmental Consultants / Nominated expert	A specialist consultant who will act in an advisory capacity on request from the proponent, Site Manager and Environment and Social Manager. Responsible for: <ul style="list-style-type: none"> <li>- Ensuring they have undertaken a site induction and are conversant with the requirements of this Construction-ESMP;</li> <li>- Liaise closely with the Environment and Social Manager throughout their work on site;</li> <li>- Reporting any issues of concerns to the Environment and Social Manager, PM or Site Manager as soon as the issue arises, and take appropriate action as they deem necessary in line with this Construction-ESMP;</li> <li>- Record any issues or concerns and submit a written report to the Environment and Social Manager and PM;</li> <li>- Adherence to this Construction-ESMP at all times;</li> <li>- Reporting of any operations and conditions that deviate from the Construction-ESMP or any non-compliant issues or accidents to the Site Manager;</li> <li>- Monthly audits and inspections during construction; and</li> <li>- Annual audit of compliance.</li> </ul>

### 2.3. CONTRACTORS

Any contractors hired during the construction works would need to be compliant with this Construction-ESMP, and would be responsible for the following:

- Undertaking construction activities in accordance with this Construction-ESMP as well as relevant policies, procedures, management plans, statutory requirements, and contract requirements;
- Implementing appropriate environmental and safety management measures;
- Reporting of environmental issues, including actual or potential environmental incidents and hazards, to the Site Manager or PM; and
- Ensuring appropriate corrective or remedial action is taken to address all environmental hazards and incidents reported by employees and subcontractors.

## 2.4. EMPLOYMENT

The proponent and all contractors shall comply with the requirements of the Republic of Namibia Regulations for Labour, Health and Safety, and any amendments to these regulations. During operations, the following shall be complied with:

- In liaison with local government and community authorities the Contractor shall ensure that local people have access to information about job opportunities and are considered first for construction contract employment positions;
- The number of job opportunities shall be made known together with the associated skills and qualifications. The maximum length of time the job is likely to last for shall be clearly indicated;
- Foreign workers with no proof of permanent legal residence shall not be hired; and
- Every effort shall be made to recruit from the pool of unemployed workers living in Walvis Bay.

Additional employment principals shall be developed and included to this Construction-ESMP to ensure a robust employment policy is implemented across the proposed project.

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## 3. COMMUNICATIONS AND TRAINING

### 3.1. INTRODUCTION

The proposed project will involve various construction activities in both the marine environment and on land, both of which have sensitive receptors that are likely to be affected by construction works. It is therefore imperative that all workers and the local community are regularly liaised with to communicate aspects such as the scheduling of certain activities; safety and environmental restrictions and risks with certain activities; updates to the progress of construction works; and certain site environmental issues or concerns to be aware of.

### 3.2. COMMUNICATIONS: INTERNAL

#### 3.2.1. ENVIRONMENTAL COMMUNICATIONS

The PM, Site Manager, and Environment and Social Manager, shall communicate site wide environmental issues through the following means:

- Site induction (see section 3.5.1);
- Emails;
- Environmental posters and site notices;
- Method Statement and Risk Assessment briefings (see section 5.2);
- Audits and site inspections;
- Toolbox talks, including instruction on incident response procedures; and
- Key project specific environmental issues briefings.

This Construction-ESMP shall be distributed to the project team, including contractors and sub-contractors, to ensure that the environmental requirements are communicated effectively. Key activities and environmentally sensitive operations shall also be briefed to workers and contractors.

#### 3.2.2. MEETINGS

During the construction phase, internal communication between the management team shall include regular progress meetings (e.g. monthly), covering:

- Training undertaken;
- Progress reports;
- Inspections, audits and non-conformance;
- Complaints received;
- Visits by external bodies and the outcome or feedback from such visits; and
- Objective / target achievement, including reporting on environmental performance.

### 3.3. COMMUNICATIONS: EXTERNAL

#### 3.3.1. COMMUNITY

The Environment and Social Manager shall represent the proposed project and shall liaise with the local communities and stakeholders regarding the construction works. The following communications shall be undertaken during the construction phase. This list is not limited and may develop over time depending on community feedback and requests.



- 
- Clear contact details of the proponent and Environment and Social Manager circulated around the community, should there be any questions, concerns or complaints;
  - Quarterly project updates to local residents through notice boards / news-letter / meetings to keep the local community up to date with progress and any new operations to be carried out;
  - Quarterly environmental forums reporting environment and social performance to multi stakeholder forum including government, local council, neighbours and stakeholders; this group of representatives will then report back to their respective associations;
  - Early warnings of noisy construction works through notices, what's app / group text alerts, door-to-door engagement and letter dropping for surrounding residents; and
  - Flyers circulated around the community with information detailing available alternative sporting facilities for the duration of when the existing ones and replacements ones are unavailable.

This Construction-ESMP will be published on ECC and the proponent's website.

### 3.3.2. OTHER STAKEHOLDERS

During the construction works, communication will be required with external parties. Communication may take the form of scheduled meetings, site visits and written correspondence. The key stakeholders who shall be communicated with include, but are not limited to:

- Walvis Bay Municipality;
- The Namibian Dolphin Project (Dr Simon Elwen);
- Namport; and
- Ministry of Environment and Tourism, Ministry of Fisheries, Marine Resources or other government stakeholders.

### 3.4. COMPLAINTS HANDLING AND RECORDING

Complaints shall be directed to a dedicated email address and nominated phone number, the details of which shall be circulated to the local community and displayed on notice boards. Any complaints received verbally by any personnel on the project site shall be recorded by the receiver, including the name and contact details of the complainant, date and time of the complaint, and the nature of complaint. The information shall be given to the Environmental and Social Manager who is overall responsible for the management of complaints, and will provide a written response to the complainant. The Environment and Social Manager shall inform the Site Manager of issues, concerns or complaints.

The Environment and Social Manager shall maintain a complaint's register (see Annex C for a template) that will detail the name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover. The Environment and Social Manager shall be responsible for nominating the correct personnel to co-ordinate and resolve the issue.

The Environment and Social Manager shall inform the Municipality of this complaints register, its location and the person responsible to ensure that local community or the general public are aware and know about the complaints register.

The workforce shall be informed about the complaints register, its location and the person responsible, in order to refer local residents or the general public who wish to lodge a complaint.

The complainant shall be informed in writing of the results of the investigation and action to be taken to rectify or address the matter(s). Where no action is taken, the reasons why are to be recorded in the register.

The complaints register shall be kept for the duration of the project and will be available for government or public review upon request.

### 3.5. TRAINING AND AWARENESS

All personnel working on the construction site shall be competent to perform tasks that have the potential to cause an environmental impact. Competence is defined in terms of appropriate education, training and experience.

#### 3.5.1. SITE INDUCTION

All personnel involved in the proposed project will be inducted to site with specific environment and social awareness training, and health and safety issues concerning the construction works. The environment and social awareness training will ensure that staff are familiar with the principles of this Construction-ESMP, the environment and social aspects and impacts associated with their activities, the procedures in place to control these impacts and the consequences of departure from these procedures.

The PM shall ensure a register of completed training is maintained and issued to the Environment and Social Manager monthly or when there are additions. The training may be provided annually, as a refresher or when certain components may change over time.

The Site Induction should include, but not limited to the following:

- A general site-specific induction that outlines:
  - o What is meant by “environment” and “social”;
  - o Why the environment needs to be protected and conserved;
  - o How construction activities can impact on the environment;
  - o What can be done to mitigate against such impacts;
- The inductee’s role and responsibilities with respect to implementing the Construction-ESMP;
- The environmental impacts and social responsibilities associated with the inductee’s working activities;
- The site environmental rules;
- Details of how to deal with, and who to contact if environmental problems should they occur;
- Basic spill response and briefing on use of all location of spill kits;
- The potential consequences of non-compliance with this Construction-ESMP and relevant statutory requirements; and
- The role of responsible people for the proposed project.

#### 3.5.2. SPECIALIST BRIEFINGS

Additional environment and social briefings may be delivered to specific personnel allocated with environmental responsibilities or to employees on specific environmental risks applicable to specific activities and mitigation measures required.

Specialist consultants, such as Mr Alan Louw and the Namibian Dolphin Project, may be brought in to provide additional advice on specific activities.

## 4. REPORTING, COMPLIANCE AND ENFORCEMENT

### 4.1. ENVIRONMENTAL PERMITS

Prior to construction works, all permits will be obtained. The following environmental permits will be in place prior to applicable activities being undertaken:

- Approximately two 22,000 litre fuel tanks will be on site during construction, therefore the project will require a licence and certificate to store and dispense fuel under the Petroleum Products and Energy Act (Act 13 of 1990) and associated amendments and regulations.
- An existing building that is to be demolished on the site has been identified to contain asbestos cement roofing material. In terms of Section 5 of the Atmospheric Pollution Prevention Ordinance 11 of 1976, any person carrying out a "scheduled process" within a "controlled area" has to obtain a registration certificate from the administering authority, in this case the Department of Health. The removal of this material will be completed by a licenced and registered contractor specialising in asbestos removal.

A check list of permits, approvals, forms, registers and documents that are required prior to specific construction activities is provided in Annex A.

### 4.2. ENVIRONMENTAL PERFORMANCE MANAGEMENT

#### 4.2.1. SUMMARY OF ENVIRONMENTAL RISKS AND MITIGATION MEASURES

Chapter 6 provides a Register of Environmental Risks and Issues, which identifies mitigation and monitoring measures, as well as roles responsible. This register will be subject to regular review by the Environment and Social Manager together with the Site Manager, and updated when necessary.

This register will be used to undertake weekly and monthly inspections by the PM, Site Manager and Environment and Social Manager (see next section) to ensure the project is compliant with this Construction-ESMP.

#### 4.2.2. ENVIRONMENTAL INSPECTIONS & COMPLIANCE MONITORING

##### 4.2.2.1. DAILY COMPLIANCE MONITORING

A copy of this Construction-ESMPs shall be on site throughout the construction works and shall be available upon request. It is the responsibility of the PM and Site Manager to ensure this Construction-ESMP is complied with through their daily roles.

Daily inspections will be undertaken by the Site Manager (or nominated site supervisor) and a weekly report shall be prepared (see Annex D for a template which shall be developed prior to construction). Any environmental problems or risks identified shall be notified to the Environment and Social Manager and actioned as soon as is reasonably practicable.

##### 4.2.2.2. MONTHLY COMPLIANCE MONITORING

Monthly inspections shall be undertaken by the Environment and Social Manager to check that the standards and procedures set out in this Construction-ESMP are being complied with and pollution control measures are in place and working correctly. Monthly Compliance Reports shall be produced (see Annex E for a template which shall be completed prior to construction commenced). This report shall be completed by the Environment and Social Manager and issued to the PM and Site Manager who will review and discuss any issues with the Environment and Social Manager. The report shall contain a brief description of any areas of non-conformance with the contract specification, the reason for the non-conformance, the responsible party, the result (consequence), the corrective action taken and any necessary follow up measures required.

#### 4.2.2.3. INSPECTION OF PLANT AND EQUIPMENT

All plant and equipment performing an environmental function shall be well maintained and serviced in line with their specification. A register of all plant and equipment under the responsibility of the Contractor shall be maintained and serviced as and when required. This register shall be reviewed monthly to ensure all checks and services for plant and equipment have been undertaken. The register shall include, but not limited to the following:

- Piece of plant and equipment;
- Make and Model;
- Frequency of required service and scheduled dates;
- Dates of last inspection, maintenance and/or test;
- Notes of any issues or concerns; and
- Responsible person.

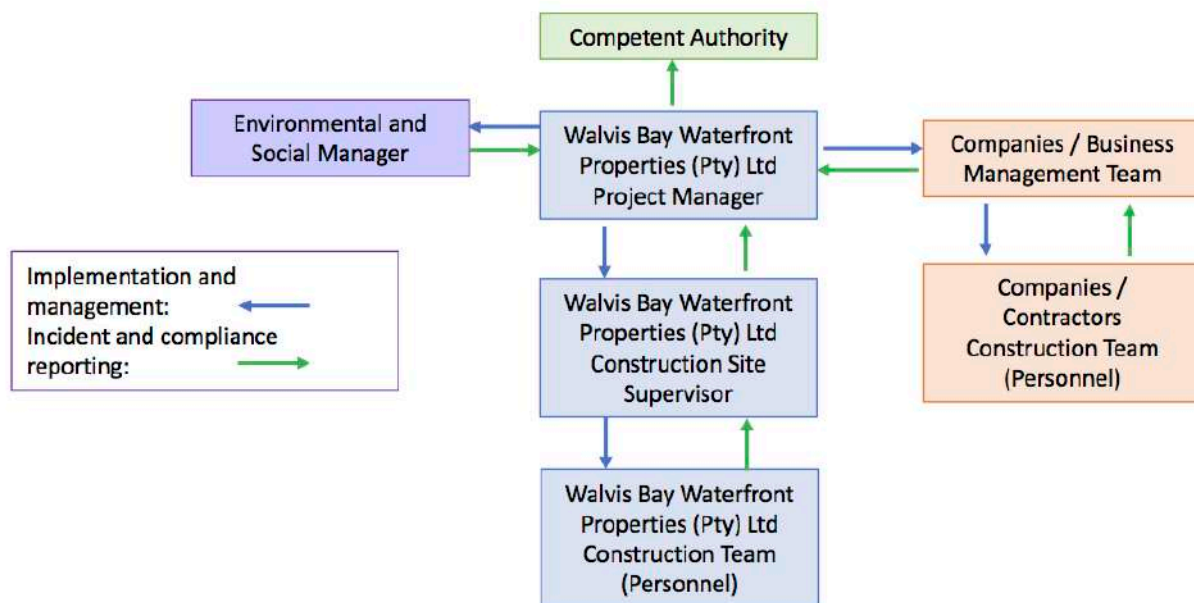
#### 4.2.2.4. ANNUAL COMPLIANCE MONITORING

An independent annual audit shall be undertaken to review operations and compliance over the last 12 months. All monthly reports shall be reviewed, identifying any trends or significant areas of concern, as well as measures implemented to manage / resolve the environment or social issue. All complaints or comments and actions taken shall be reviewed. Compliance and legislative changes shall be reviewed, and lessons learnt shall be captured. This Construction-ESMP shall be amended as required, and follow up training, awareness or updates shall be provided across the project.

A check list of permits, approvals, forms, registers and documents that are required prior to certain construction activities is provided in Annex A. This checklist shall be used to ensure compliance with this Construction-ESMP, and shall be updated particularly with any required Method Statements.

### 4.3. REPORTING

There will be a requirement to ensure that any incident is reported to the proponent’s Management Team. In the event of any environmental issue, failure of plant and equipment that perform an environmental function or accident, the reporting structure presented in Figure 2.



**Figure 2 – Reporting Structure overview**

#### 4.3.1. NON-COMPLIANCE

Where it has been identified that works are not compliant with this Construction-ESMP, the proponent shall employ corrective actions so that the works return to being compliant as soon as possible. In instances where the requirements of the Construction-ESMP are not upheld, a Non-Conformance and Corrective Action Notice shall be produced. The Notice shall be generated during the inspections conducted by the Supervisors, the Site Manager, Environment and Social Manager or external third-party audits. The Site Manager will be responsible for ensuring a corrective action plan is established and implemented to address the identified shortcoming.

A non-compliance event / situation is considered if:

- There is evidence of contravention of this Construction-ESMP and associated indicators or objectives;
- The Site Manager and/or Contractor have failed to comply with corrective or other instructions issued by the Environmental Manager or qualified authority; or
- The Site Manager and Contractor fail to respond to complaints from the public.

Works will be stopped in the event of a non-compliance, until corrective action(s) has been completed.

A Compliance Report will be produced each month, as discussed previously.

#### 4.3.2. DISCIPLINARY ACTION

This Construction-ESMP is a legally binding document and non-compliance with it shall result in disciplinary action being taken against the perpetrator/s. Such action may take the form of (but is not limited to):

- Fines / penalties;

- Legal action;
- Monetary penalties imposed by the proponent on the contractor;
- Withdrawal of license/s; and
- Suspension of work.

The disciplinary action shall be determined according to the nature and extend of the transgression / non-compliance, and penalties are to be weighed against the severity of the incident.

#### 4.4. CONTROL OF RECORDS

A range of environmental records, for example waste management records are required and specified throughout this Construction-ESMP. A summary of requirements is provided in Annex A.

Environmental records shall be maintained, either in hard copy or electronic format and shall be readily identifiable, retrievable and protected against damage, deterioration or loss.

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## 5. CONSTRUCTION ENVIRONMENTAL MANAGEMENT

### 5.1. OBJECTIVES AND TARGETS

Environmental objectives for the construction works are as follows:

- Zero pollution incidents;
- Minimise waste sent to landfill or being burnt;
- Minimise disruption to residents (and therefore complaints); and
- Protect marine biodiversity.

Procedures for monitoring construction processes against the project environmental objectives will be proposed by the Contractor and agreed with the PM.

### 5.2. METHOD STATEMENTS AND RISK ASSESSMENTS

Method Statements and Risk Assessments shall be produced for specific activities prior to works commencing, and shall include environmental protection and mitigation measures, as well as emergency preparedness appropriate to the activity covered. The Site Manager will draft each one and the PM and Environment and Social Manager will review, providing advise where necessary.

Method Statement briefings shall be provided before personnel carry out key activities for the first time.

Method Statements shall be produced for a range of activities, including, but not limited to:

- Worker campsite (see section 5.5);
- Establishment and set up of Construction site (see section 5.6);
- Removal, management and reinstatement of palm trees (see section 5.7);
- Clearance of grass, vegetation, topsoil and subsoil (see section 5.7);
- Community nuisances and hazards (see section 5.10);
- Surface water run-off, groundwater and silt management (see section 5.14.1);
- Dredging works (see section 5.11);
- Marina Wall construction works (piling and rock dropping) (see section 5.11); and
- Handling and disposal of Asbestos (see section 5.14.2).

### 5.3. CONSTRUCTION QUALITY CONTROL POINTS

Construction quality control points (QCPs) shall be identified in the project schedule prior to construction activities commencing. QCPs are required to control project risks, including environmental and social, during specific activities, and to allow for stringent monitoring and accountability to reduce risk within activities. At QCPS, sign off is required upon completion of a construction activity to allow the following activity to commence. This sign off shall be undertaken by the identified responsible personnel.

A QCP system will be in place for the construction phase. QCPs shall be identified and implemented for the construction phase by incorporating them into the method statements and must include the key responsibility personnel that will sign off and or witness each quality control point (critical). QCPs have been incorporated into the environmental monitoring plan Annex G.

#### 5.4. PROJECT CLOSE

All QCPs shall be closed before project close and signed off.

#### 5.5. WORKER CAMPSITE AND MANAGEMENT

The site to be used to accommodate workers will be an area that minimises the potential for social and environmental impacts, as well as public nuisances. The campsite shall be within the town limits of Walvis Bay and the proponent and contractor will prepare a Method Statement for the set-up and operations which will contain, but is not limited to the following details:

- Site location and layout;
- Preparatory works
- Fencing;
- Waste management (which will comply with the project's waste management principals – see section 0);
- Water supply;
- Management of infectious diseases (e.g. HIV)
- Sewerage management; and
- Site reinstatement.

The campsite will have defined rules that shall be communicated in a Site Induction to all workers staying in the camp during. Workers who do not comply to these rules shall be disciplined accordingly in line with predetermined agreements set out by the Site Manager prior to construction works. Rules will include, but are not limited to the following.

- No visits from local people to the campsite will be allowed unless approved by the Site Manager;
- The campsite shall be kept clean at all times to minimise visual impact, odours and pests, and waste management measures must be adhered to at all times;
- Workers shall not harvest firewood from the site or surrounding areas;
- No alcohol or drugs permitted on the construction camp site
- Workers must make use of the facilities and equipment provided for them; no ad hoc alternatives shall be allowed, for example fires for cooking outside of designated areas or using the bush as a toilet;

The campsite will be reinstated back to its original condition upon completion of the construction works. This shall be undertaken in line with an approved Method Statement.

#### 5.6. ESTABLISHMENT AND MANAGEMENT OF CONSTRUCTION SITE

A Method Statement will be produced setting out how the site will be established and managed, and will include but not limited to the following information.

The construction site shall be established to minimise impacts on the environment and society, and shall include the following considerations:

- Site boundary fence (made of material to reduce noise and visual impacts (e.g. hoarding) and at least 2m high) to be established as soon as possible to prevent windblown litter or waste, to reduce dusts being blown off site and reduce visual impacts on local residents;
- Provide access routes / points onto site at a suitable location to avoid impacts on local residents (on Atlantic Street);



- Plant and equipment shall be brought onto site as and when required, and shall follow designated routes and access points;
- Plant and equipment shall be stored in specific areas taking into consideration impacts on local residents (e.g. start-up of equipment and noise levels);
- A construction office area (construction site office, toilets and other welfare facilities, and the storage of small plant and equipment) will be set up in a suitable location to avoid impacts on local residents;
- Waste collection area and material storage areas shall be located in areas with least impact (visual and other nuisances) to the local residents;
- Lighting shall only be used when necessary and will be designed to minimise spillage of light, and orientated away from residential properties;
- Construction site office located away from residential properties;

A 'good housekeeping' policy shall be adopted across the construction site, which will include the following requirements:

- No fires on site;
- Considerate behaviour of all site staff;
- Maintenance of staff welfare facilities;
- Removal of food waste and other rubbish at frequent intervals;
- No littering or discard of random solid waste; and
- Maintenance of road cleanliness surrounding the site.

## 5.7. VEGETATION CLEARANCE AND TOPSOIL AND SUBSOIL STRIP

Vegetation shall only be cleared on the construction site and where possible, established trees along the perimeter of the construction site shall remain in situ, with a clear exclusion zone around each one to protect the roots during construction. This exclusion zone should be approximately two metres from the trunk of the tree.

Where possible, palm trees will be removed and stored until reinstatement. Trees shall be removed, stored and reinstated by a specialist contractor. A Method Statement for this activity shall be prepared.

The area has large areas of grass, which shall be removed and transferred to the Kuisebmond site for reuse on the cricket oval. Any vegetation cleared and not reused will be taken to a suitable site for composting where possible. Topsoil and subsoil shall be stripped and separated where possible for reuse in the community or taken to a suitable site for reuse.

A Method Statement for the clearance of grass, vegetation, topsoil and subsoil shall be prepared.

## 5.8. ARCHAEOLOGICAL REMAINS

The ESIA has determined that there is a low probability to cause a significant environmental impact on cultural heritage; however, there is a risk that during construction undiscovered archaeological remains may be uncovered. In the event of this occurrence, the following measures shall be applied:

- Works to cease, area to be demarcated with appropriate tape by the site supervisor, and the Site Manager to be informed;
- Site Manager to visit the site and determine whether work can proceed without damage to findings, mark exclusions boundary and inform the Environment and Social Manager with the GPS position if possible;

- Environmental and Social Manager to inspect the site and determine if and specialist is required to determine significance;
- Environment and Social Manager / Archaeological Specialist to evaluate the significance of the remains and identify appropriate action, for example, record and remove; relocate or leave in situ (depending on the nature and value of the remains);
- Inform the police if the remains are human; and
- Obtain appropriate clearance or approval from the competent authority, if required, and recover and remove the remains to the National Museum or National Forensic Laboratory as direct.

## 5.9. SOLID WASTE MANAGEMENT

The EMA (2007), Section 3, paragraph (i) states that waste must be reduced, re-used and recycled where possible, therefore in accordance with the Act, waste generated on site will be managed and dealt with in accordance with a Waste Management Plan. This Plan will be produced prior to construction activities commencing and will include the following information:

- Describe each waste type expected to be produced during construction activities;
- Estimate the quantity of each waste type;
- Identify the waste management action proposed for each waste stream, including re-using, recycling, recovery and disposal;
- Designated areas to collect and separate waste; and
- Identify waste carrier and waste Disposal Company.

A draft Waste Management Plan template is provided in Annex F. This shall be drafted prior to construction works, and shall be updated on a regular basis to ensure all waste and disposal route are identified. The aim of the Waste Management Plan is to achieve sustainable waste management. Their main purpose is to outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. In addition, it will also outline any potential economical and investment requirements for the treatment and / or disposal of waste.

The following waste management measures will be followed:

- Waste will be collected, separated and stored in a designated area which will be appropriately fenced and signposted to keep out unauthorised people and animals;
- Waste collection containers will be of an appropriate design to ensure that no waste can escape, and will be labelled with waste type (e.g. wood, metals, building rubble, garden waste, domestic waste);
- Waste storage areas shall be kept clean and tidy at all times;
- Bins shall be emptied regularly to avoid pests and bad odours; and
- No burning will be allowed on site.

Portable toilets / toilet facilities will be provided for the construction workforce. These will be emptied and maintained regularly by a suitable and reputable sanitation contractor.

Any hazardous material and wastes (including medical waste, if necessary) shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. Hazardous and non-hazardous waste shall be stored separately at all times.

## 5.10. COMMUNITY NUISANCES AND HAZARDS

Tall personnel shall respect the property and rights of local inhabitants at all times and shall treat all such persons with courtesy. A Method Statement will be produced detailing the specific measures that are to be implemented to manage nuisances and hazards to the community. Measures are detailed in these next sections that shall be included in the Method Statement.

### 5.10.1. DUST CONTROL

Dust control measures shall be used along the roads around and approaching the site, to reduce detrimental impacts to the local community and general public, as well as the marine environment. Control measures to be considered and implemented include the following:

- Use of water bowsers to dampen dust in dry conditions;
- Erect a site boundary closed fence (not mesh) as soon as possible;
- Avoid stockpiling on site, and if soil or sand is stockpiled, cover and limit height to 2m;
- Avoid undertaking activities that will generate dust / disturb the ground during high winds;
- Use of temporary stabilizing measures such as chemical soil binders;
- Re-instating areas cleared of vegetation as soon as is practically possible;
- Cover excavated / dredged material during transportation to Industrial Zone 14; and
- Limiting vehicle speeds in areas in proximity to dwellings and other habitation.

### 5.10.2. NOISE CONTROL

Noise should shall be minimised as much as possible during construction works. The following measures shall be applied:

- Erect a site boundary fence (hoarding fence is preferable, at least 2m high) as soon as possible;
- Limit working hours to 7am to 6pm weekdays and 7am until 1pm on Saturday;
- Undertake noisy activities between 8am and 5pm during weekdays;
- Inform local residents of scheduling and duration of noisy activities through notices, what's app or group text notifications, door-to-door knocking or letter dropping (responsibility of the Environment and Social Manager);
- Regular maintenance and servicing of vehicles, plant and equipment;
- Use hydraulic plant in preference to pneumatic plant where possible;
- Minimise the multiple use of noisy plant and equipment;
- All plant to be shut down or throttled back between periods of use;
- Implement engineering controls where necessary, e.g. silencers;
- Acoustic enclosures may be required for fixed plant such as generators, depending on the siting on the construction site.

The Contractor shall comply with the World Health Organization guidelines (<http://apps.who.int/iris/handle/10665/66217>) for the management of community noise.

### 5.10.3. PRIVATE MEANS OF ACCESS

Access shall be maintained at all times to residential properties and businesses. Where required, banksman shall aid private vehicles accessing properties and halt construction traffic. A Traffic Management Plan (see Section 5.11) shall be implemented prior to and during construction.

### 5.11. CONSTRUCTION TRAFFIC

The Traffic Management Plan documents designated routes to and from the construction site for all construction vehicles, as well as identifying site entrances/exits. Where there are exceptions to the defined routes, approval from the Site Manager shall be obtained before the journey.

The Site Manager shall ensure this plan is completed and signed off by the Environmental and Social Manager prior to construction works commence, and shall ensure compliance. Personnel deviating from the designated or approved routes will be appropriately disciplined.

### 5.12. RISKS TO THE MARINE ENVIRONMENT

The proposed project will undertake various construction activities that could cause impacts to the marine environment. A Method Statement shall be prepared prior to any construction activities in or next to the sea, including piling, dredging, construction of the marina wall, removal of the road and ground excavations.

The Method Statement shall include measures to avoid and minimise impacts, and set out any monitoring requirements, which shall include, but not limited to the following:

- Dredging works to be undertaken on the outgoing tide and to avoid strong trade winds;
- Limit activities to the specified area, schedule and for the planned durations;
- Engage the Namibian Dolphin Project to conduct Hydrophone monitoring prior to and during construction activities to determine presence of animals;
- Do not undertake activities until marine mammals have left the area;
- Ensure a Marine Mammal Observer is available to observe and identify presence of animals prior to works and to cease works if dolphins are within the predetermined safe zones;
- Ensure Mr Alan Louw or his nominated representative is present to oversee all dredging activities;
- Use soft-start and ramp-up operations; and
- Maintain and clean all plant and equipment used in the marine environment.

Construction activities including removal of road surfaces and ground excavation will be undertaken along the coastline. Measures shall be taken to avoid surface water run-off entering the sea without prior filtration or treatment, and to ensure loose ground does not enter the sea. The management of surface water run-off and activities next to the sea shall be defined within the Method Statement.

### 5.13. ENVIRONMENTAL MONITORING

Monitoring during operations shall be undertaken to ensure the impacts on society and the environment are minimised and to evaluate how effective the environmental management has been, over an extended period of time. A preliminary environment and social monitoring plan is attached as Annex G.

## 5.14. POLLUTION CONTROL AND CONTINGENCY PLAN

### 5.14.1. SURFACE WATER RUN-OFF, GROUNDWATER AND SILT MANAGEMENT

All construction operations on site shall be carried out in a manner to minimise the production and discharge of silty run-off. In particular, where any dewatering or pumping of groundwater has to be carried out, a Method Statement will be produced setting out any required temporary drainage and the methods of collection and disposal of the waters. The Environmental and Social Manager shall sign off this Method Statement.

Specific ground excavation activities and other construction activities shall be avoided during heavy rainfall events to minimise silt laden surface runoff entering the marine environment. Suitable drainage shall be employed to prevent surface water entering the marine environment without treatment and filtration.

### 5.14.2. HANDLING AND DISPOSAL OF ASBESTOS

One of the existing buildings on site has asbestos in the roof material. A registration certificate (see section 4.1) shall be obtained by a qualified asbestos removal contractor who will remove the material in line with legal requirements. The removal of this contaminated material will produce hazardous waste, which will be disposed of at the hazardous waste disposal site.

### 5.14.3. STORAGE OF FUELS, OILS AND CHEMICALS

Approximately two 22,000 litre fuel tanks will be on site during construction, and potentially other substances such as oils and chemicals. The Contractor shall comply with all applicable Namibian laws, regulations, permit and approval conditions and requirements relevant to the storage, use, and proper disposal of hydrocarbons (see section 4.1).

Where fuels, oils or chemicals are stored on the construction site, the following should be applied:

- Fuel storage tanks should be sited in a location specified and approved by the Site Manager and should be enclosed with a security fence with a lockable gate;
- Any fuel tank or container should be on a flat area, at least 100m from residential properties and the sea;
- The container shall be stored on an impervious base, be bunded and capable of containing at least 110% of the total capacity of the storage container;
- The bund should be made of impermeable material;
- Signs indicating 'no smoking' 'no naked flames' and 'danger' will be provided in appropriate languages, and will conform to a recognised standard;
- The capacity of the tank and the product within the tank shall be displayed;
- All personnel handling fuel, oil or chemicals shall be supplied with the correct personnel protective equipment (PPE).

### 5.14.4. HANDLING OF FUEL, OIL AND CHEMICALS

The Site Manager shall take all reasonable precautions to prevent fuel, oil and chemical spills during the course of construction. To this end, the Site Manager shall ensure that:

- All necessary approvals are in place prior to bringing fuel, oil or chemicals on to site;
- All fuel, oil and chemical deliveries will be supervised by a responsible person, who will be trained to deal with any spills;
- All mobile plant shall be refuelled in a designated area on an impermeable surface and away from drains. A spill kit will be located at each refuelling point. Where it is impractical to refuel within a bunded area, a drip tray will be available to catch any spills caused by over fuelling;

- Storage tank levels will be checked before delivery to prevent overfilling and delivering the wrong product;
- Regular audits are performed to verify that no leaking or defective equipment is brought onto site;
- Any oils or lubricants discharged during routine vehicle servicing on site are captured using drip trays, containers or other appropriate containment measures;
- Equipment is maintained regularly to ensure that no fuel, oil or hydraulic leaks occur
- All vehicles or equipment that are used in close proximity to the sea shall be cleaned of oil, grease and other contaminants damaging to marine life; and
- Any fuelling or repairs shall be carried out in designated areas more than 100m away from the coastline and shall be supervised by personnel familiar with spill containment and clean up procedures.

The Site Manager shall ensure that there is sufficient absorbent material and spill kits available on site to manage accidental spills. The location of and instructions on how to use this equipment shall be included in the Site Induction, and nominated personnel will be appropriately trained to use spill kits. The Site Environmental Emergency Plan (see section 5.16), will have detailed instructions on how to respond to spills.

Any accidental spillages of fuels and oils, or other hazardous substances, shall be cleaned up immediately and be reported Site Manager. The following responses shall be undertaken:

- Minor spill: Only diesel and oil, with no human injury, contamination to water bodies or other environmental receptors. Contain and clean up the spill using available spill kit. Report to the Site Manager and Environment and Social Manager, supplying the following information:
  - o Date, time, and location;
  - o Substance spilled and quantity; and
  - o Actions taken, and any future remediation required.
- Major Spill: Resulting in human injury or/and environmental contamination and water body contamination. Contain the spill if possible and report the spill to the Site Manager, who shall then alert the appropriate emergency services (see Table 2). In addition to the above information for a minor spill, the Site Manager shall also be informed of any immediate dangers, e.g. fire, explosion, release of chemical fumes.

#### 5.14.5. CEMENT DELIVERY

Pre-made concrete will be delivered to the site in a cement agitator truck and shall be delivered to a specific designated area that require cement for construction. In the event of a cement spill the above-mentioned spill response procedure will be enacted.

#### 5.15. FIRE PREVENTION

The Site Manager shall take all necessary precautions to prevent the ignition and spread of fires caused either deliberately or accidentally as a result of the work being performed.

The Site Manager shall prepare a Fire Prevention Plan for fire prevention and emergency management. The Plan shall include, but shall not be limited to, the following:

- Potential sources of fire risk;
- Procedures to be followed to control an accidental fire;
- Identification and location of fire-fighting equipment that will be maintained on site and deployed in the event of an emergency.

The Site Induction will include a briefing of the risks and potential consequences of starting fires. Employees shall also be warned of the risks of careless disposal of burning cigarette butts.

The Site Manager shall provide fire-fighting equipment at specified localities on the site to meet any emergency resulting from a fire. The location of this equipment will be included in the Site Induction and within the Site Manager, as well as clearly marked on signs around the site.

#### 5.16. ENVIRONMENTAL EMERGENCY PLAN

An Environmental Emergency Plan will be prepared prior to construction and communicated to all members of the project team including sub-contractors and Emergency Services. The aim of the plan is to set out measures that shall be implemented during an environmental emergency. The plan shall detail controls for aspects such as:

- Site drainage controls;
- Fuel handling procedures;
- Incident notification procedures;
- Pollution control equipment requirements; and
- Procedures for the control of dust and mud; and
- Protection measures of water body (the sea) from chemical spills or sediment laden run off.

Responsible staff will be trained in emergency procedures to form an Emergency Team, so that these procedures can be implemented swiftly and effectively. Periodic testing of emergency procedures will be undertaken by the Site Manager. The Environment and Social Manager will observe the test and produce a report on the results. Any corrective actions are taken forward for review and approval.

Should an emergency incident occur, the Environment and Social Manager will be notified immediately. The emergency response will be co-ordinated by the Site Manager.

Protective measures, mitigation, clean up and remediation actions will be identified from the evaluation and shall be put into place, having regard for the sensitivities of the environment. A record of the emergency incident will be drafted by the PM which will include the nature of the corrective action undertaken.

The Site Manager and PM shall investigate the cause of all incidents and must provide written results of the investigation and recommendations on how to prevent a recurrence of such incidents.

#### 5.17. ENVIRONMENTAL EMERGENCY AND RESPONSE CONTACTS

The Environment and Social Manager will be the primary contact person in the event of an environmental emergency. As discussed in Section 2.2, the Environment and Social Manager has the authority and independence to request reasonable steps be taken to avoid or minimise unintended or adverse environmental impacts, and failing the effectiveness of such steps, to direct that relevant actions be ceased immediately should an adverse environmental impact be anticipated.

In the event of an incident that requires the emergency services, the services that should be contacted are listed in Table 2.

**Table 2 - Emergency Services contact telephone numbers**

AMBULANCE	POLICE	FIRE BRIGADE	SEA RESCUE	NAMPORT FIRE AND PORT CONTROL
+264 81 129 3875	+264 64 - 219 000, +264 64 – 219036 064 219 048 219 048	+264 81 122 0833 or 081 122 0888	208 2221 or 081 129 6295	208 2221 or 208 2265

For large-scale spills and other significant environmental incidents, the fire services shall be contacted as required and the Ministry of Environment and Tourism (MET) office informed of the incident (telephone +264 61 284 2111). All correspondence with MET should be undertaken by the PM as guided by the Environment and Social Manager.

For the clean-up of smaller spills, the relevant Material Safety Data Sheet (MSDS) should be obtained online and be consulted to determine the appropriate clean-up procedure. Basic spill response training will be provided as part of the site environmental induction, spill response equipment, including relevant MSDS copies, will be provided in areas where potentially environmentally hazardous chemicals may be used.

All environmental incidents, regardless of their size or significance, should be recorded and reported to either the PM or the Environment and Social Manager.



## 6. REGISTER OF ENVIRONMENTAL RISKS AND ISSUES

### 6.1. INTRODUCTION

An environmental review of the proposed project has been completed to identify all the commitments and agreements made within the ESIA report. From this, a schedule of environmental commitments and risks has been produced, which details deliverables including measures identified for the prevention of pollution or damage to the environment during the construction phase.

**Table 3 – Environmental Risks and Issues, Mitigation and Monitoring Measures**

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
1.1	Worker Campsite: Set-up	<ul style="list-style-type: none"> <li>- Loss of vegetation</li> <li>- Visual impacts</li> <li>- Increased noise levels</li> <li>- Pests and odours</li> </ul>	<ul style="list-style-type: none"> <li>- Avoid removing vegetation.</li> <li>- Suitable fencing around the site.</li> <li>- Appropriate siting to take into consideration existing residents.</li> <li>- Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager to oversee the set-up of the campsite.</li> <li>- Final check by the Site Manager and Environment and Social Manager once site is established.</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of set-up</li> <li>- Final one-off check</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>
1.2	Worker Campsite: Operations	<ul style="list-style-type: none"> <li>- Visual impacts</li> <li>- Increased noise levels</li> <li>- Pests and odours</li> </ul>	<ul style="list-style-type: none"> <li>- Appropriate waste collection points and waste management, and the site to be kept clean at all times.</li> <li>- Appropriate sewerage management.</li> <li>- No unauthorised visitors.</li> <li>- Implementation of Method Statement and campsite rules.</li> </ul>	<ul style="list-style-type: none"> <li>- Weekly checks by the Site Manager and weekly reports.</li> <li>- Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>- Weekly</li> <li>- Monthly</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>
1.3	Worker Campsite: Reinstatement	<ul style="list-style-type: none"> <li>- Soil degradation</li> <li>- Litter.</li> </ul>	<ul style="list-style-type: none"> <li>- Implementation of Method Statement.</li> <li>- Disturb any compacted soil.</li> <li>- Ensure waste is removed from site and site is reinstated back to its original condition.</li> <li>- Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager to oversee the removal and reinstatement of the campsite area.</li> <li>- Final check by the Site Manager and Environment and Social Manager once site is reinstated.</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of reinstatement</li> <li>- Final one-off check</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>
2.1	Establishment and Management of Construction site	<ul style="list-style-type: none"> <li>- Noise and dust.</li> <li>- Residential visual amenity.</li> <li>- Community severance.</li> </ul>	<ul style="list-style-type: none"> <li>- Installation of a site boundary made of hoarding and at least 2m high.</li> <li>- Designated access routes and points.</li> </ul>	<ul style="list-style-type: none"> <li>- Daily visual observations.</li> <li>- Site Manager to oversee the set-up of the site.</li> <li>- Weekly checks by the Site Manager and weekly reports.</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of set-up</li> <li>- Final one-off check</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			<ul style="list-style-type: none"> <li>- Bring plant and equipment as and when required.</li> <li>- Suitable siting of construction office, waste collection area, and storage area for plant and equipment.</li> <li>- Downward lighting.</li> <li>- Application of good housekeeping.</li> <li>- Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>- Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>		
2.2	Site preparation: Removal of vegetation	<ul style="list-style-type: none"> <li>- Loss of established vegetation, in particular palm trees and grass.</li> <li>- Potential nests – disturbance to birds</li> </ul>	<ul style="list-style-type: none"> <li>- Reuse of grass on other sites where sports facilities will be relocated. Where not possible, offer to local residents for reuse on their properties.</li> <li>- Removal and reinstatement of palm trees as soon as practicable, using a suitably qualified specialist, ensuring root protection zone is identified and managed.</li> <li>- Suitably qualified personnel to remove, store and reinstate trees, at the most suitable time of the year.</li> <li>- Any relocation of nests must be agreed with the Environment and Social Manager.</li> <li>- No animals or birds may be</li> </ul>	<ul style="list-style-type: none"> <li>- Oversee work</li> <li>- Liaise with specialist during storage</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of works</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			collected, caught, consumed or removed from site by the Contractor or their personnel on site. – Application of Method statement. – Enforcement of QCPs.			
2.3	Site preparation: Removal of top soil	– Loss of fertile soil (topsoil and subsoil)	– Recover, store and reuse for final landscaping. – Separate topsoil and sub soil – Appropriately store the soil in line with best practice to avoid degradation (e.g. store for no more than 12 months and in piles not exceeding 2m high, cover to protect from wind). – Application of Method statement. – Enforcement of QCPs.	– Weekly checks of any stored soil to minimise degradation and suitable storage arrangements.	– Duration of works – Weekly checks	– Site Manager – Environment and Social Manager
2.4	Site preparation and excavation	– Disturbance / damage of undiscovered archaeological remains	– Site Manager or appropriate person to oversee all ground excavation works. – In the event of a discovery, works to cease until advice from specialist is obtained.	– N/A	–	– Site Manager
2.5	Site preparation and excavation	– Silty surface run-off during rainfall events or through disturbing	– Suitable site drainage to avoid silty water entering the marine environment.	– Daily inspections of the site to be undertaken to detect any signs of silty surface water run-off entering marine	– Daily	– Site Manager

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		groundwater, entering marine environment and increase suspended solids or polluting water		environment.		
3.1	General construction activities: Generation of waste	<ul style="list-style-type: none"> <li>Generation of waste, odours and pests</li> </ul>	<ul style="list-style-type: none"> <li>Application of Waste Management Plan.</li> <li>Waste to be collected, separated and stored in appropriately marked areas / containers (e.g. wood, metals, building rubble, garden waste, domestic waste).</li> <li>Waste storage areas shall be appropriately signed, well maintained and good housekeeping will be applied.</li> <li>Waste will be disposed of to designated, licensed and appropriate facilities, which will be identified in the Waste Management Plan.</li> <li>No waste to be burnt on site.</li> <li>Site induction and training of staff.</li> </ul>	<ul style="list-style-type: none"> <li>Operate in accordance with the Waste Management Plan.</li> <li>Update the Waste Management Plan as and when required.</li> <li>Daily and weekly checks of waste collection area.</li> <li>Monthly checks of nominated waste disposal routes</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
4.1	Operating plant and equipment	<ul style="list-style-type: none"> <li>Local Community:</li> <li>Reduced local air quality (vehicle emissions)</li> </ul>	<ul style="list-style-type: none"> <li>Avoid idling of plant and equipment (turn off when not in use)</li> <li>Minimise the multiple use of</li> </ul>	<ul style="list-style-type: none"> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager and Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		<ul style="list-style-type: none"> <li>– Increase in local noise levels</li> </ul>	<ul style="list-style-type: none"> <li>noisy plant and equipment.</li> <li>– Where possible, position noisy plant and equipment away from residential and commercial properties.</li> <li>– Vehicles to be in good working order and well maintained and serviced in accordance with specific requirements.</li> <li>– Select equipment with lower sound power levels.</li> <li>– Site boundary fence – hoarding.</li> <li>– Contractor should be required to guarantee optimised equipment design noise levels. Implement engineering controls (e.g. silencers) in order to limit noise levels.</li> <li>– Notice to surrounding community of when noisy activities are to be undertaken.</li> <li>– Site Induction</li> </ul>	<ul style="list-style-type: none"> <li>Manager and monthly reports.</li> </ul>		
4.2	Operating plant and equipment	<ul style="list-style-type: none"> <li>– Construction Workers: Reduced local air quality</li> <li>– Increase in local noise levels</li> </ul>	<ul style="list-style-type: none"> <li>– Appropriate PPE – face masks if required, ear plugs</li> <li>– Site Induction</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks by the Site Manager and weekly reports.</li> <li>– Monthly Checks by the Environment and Social Manager and monthly reports.</li> <li>– Noise monitoring</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> <li>– Quarterly</li> <li>– Annual</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
5.1	General construction works: excavation and moving / transporting material	<ul style="list-style-type: none"> <li>Local Community and marine environment impacts through increased dust and deposition</li> </ul>	<ul style="list-style-type: none"> <li>Application of dust suppression measures e.g. dampening areas.</li> <li>Closed site boundary fence.</li> <li>Avoid certain activities during high winds.</li> <li>Avoid overfilling excavated material in trucks.</li> <li>Cover excavated / dredged material during transportation to Industrial Zone 14.</li> <li>Limit vehicle speeds</li> <li>Avoid stockpiling</li> <li>Site Induction</li> </ul>	<ul style="list-style-type: none"> <li>Daily visual observations.</li> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
5.2	General construction works: Tall infrastructure	<ul style="list-style-type: none"> <li>Impacts to resident's visual amenity.</li> <li>Collision risk for birds in flight</li> </ul>	<ul style="list-style-type: none"> <li>Avoid high masts and cranes.</li> <li>If required, keep on site for the specific activity and remove as soon as works are complete</li> <li>If lighting is required, use flashing lights of colours rather than white, and avoid the use of flood lights.</li> <li>Site boundary fence – hoarding, to be erected as soon as practicable.</li> </ul>	<ul style="list-style-type: none"> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
5.3	General construction activities: lighting	<ul style="list-style-type: none"> <li>Residential amenity</li> </ul>	<ul style="list-style-type: none"> <li>Lighting shall only be used when necessary and will be designed to minimise spillage of light, and orientated away from residential properties</li> </ul>	<ul style="list-style-type: none"> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
				reports.		
6	Construction traffic	<ul style="list-style-type: none"> <li>- Increase traffic volumes, noise and community severance.</li> </ul>	<ul style="list-style-type: none"> <li>- Construction traffic to follow designated routes, as per Traffic Management Plan.</li> <li>- Construction vehicles to enter and exit site at designated locations.</li> <li>- Avoid construction traffic during peak times (7.30 – 9.30, 12.30 – 13.30 and 16:00 – 17:00)</li> <li>- No parking or idling on roads, and implement traffic management to avoid vehicles queuing on roads entering the site.</li> <li>- Traffic calming measures to direct flow of traffic to and from the site.</li> <li>- Use of banksmen to manage heavy vehicles enter and exit the site.</li> </ul>	<ul style="list-style-type: none"> <li>- Regularly review Traffic Management Plan</li> <li>- Undertake spot checks to ensure construction traffic is following designated route.</li> <li>- Weekly checks by the Site Manager and weekly reports.</li> <li>- Monthly Checks by the Environment and Social Manager and monthly reports.</li> <li>- Noise monitoring</li> </ul>	<ul style="list-style-type: none"> <li>- Daily</li> <li>- Weekly</li> <li>- Monthly</li> <li>- Quarterly</li> <li>- Annual</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>
7	Rerouting existing services	<ul style="list-style-type: none"> <li>- Suspended services and disruption</li> </ul>	<ul style="list-style-type: none"> <li>- Prior notice of the scheduling of suspended services. Avoid sensitive times (weekends).</li> <li>- Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>- Regular community engagement</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of works</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>
8	Closure of Esplanade Road	<ul style="list-style-type: none"> <li>- Loss of access road. Traffic disruption and diversion to</li> </ul>	<ul style="list-style-type: none"> <li>- Early notice about road closure through notices and signs on and around Esplanade Drive.</li> </ul>	<ul style="list-style-type: none"> <li>- Regular community engagement</li> </ul>	<ul style="list-style-type: none"> <li>- Duration of works</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>



REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		alternative roads, altering traffic baseline	– Enforcement of QCPs.			
9	Road Upgrades: Potential diversions required and/or temporary road closures	– Increased community severance, reduced access to private properties, increase traffic on usually quiet roads.	– Appropriate signs for diversions. – Early notice about road works through notices and signs on the road to be upgraded. – Enforcement of QCPs.	– Weekly checks by the Site Manager and weekly reports. – Monthly Checks by the Environment and Social Manager and monthly reports.	– Daily – Weekly – Monthly	– Site Manager – Environment and Social Manager
10.1	Marine Construction Works: Dredging, piling and rock placing	– Increase suspended solids: reduce water quality, affect aquatic life (fish move away from area, causing dolphins and other mammals to move away) and reduce sunlight in water column – Change in Bathymetry	– Undertake activities on outgoing tide only. – Limit works during certain conditions, e.g. when trade winds are strong – Activities limited to those agreed with Municipality. – Mr Alan Louw to oversee dredging activities. – Use soft-starts and ramp up operations. – Avoid piling and dredging between June and September. – Enforcement of QCPs.	– Weekly checks by the Site Manager and weekly reports. – Monthly Checks by the Environment and Social Manager and monthly reports. – Mr Louw over-see all works. – Liaise with the Dolphin Project prior to and during works who will undertake hydrophone monitoring. – Turbidity and water quality monitoring throughout construction. – Sediment samples before construction activities. – Bathymetric survey.	– Daily – Weekly – Monthly	– Site Manager – Environment and Social Manager
10.2	Marine Construction	– Increase noise and vibration: marine	– Use soft-starts and ramp up operations.	– Weekly checks by the Site Manager and weekly reports.	– Daily – Weekly	– Site Manager – Environment and

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
	Works: Dredging, piling and rock placing	<ul style="list-style-type: none"> <li>mammals will avoid areas</li> <li>Impact to bird life</li> </ul>	<ul style="list-style-type: none"> <li>Marine Mammal Observer to observe and identify presence of animals prior to works and to cease works if dolphins are within the predetermined safe zones.</li> <li>Avoid piling and dredging between June and September.</li> <li>Limit activities to prescribed durations.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> <li>Mr Louw over-see all works.</li> <li>Engage the Namibian Dolphin Project to conduct Hydrophone monitoring prior to and during construction activities to determine presence of animals.</li> <li>Avian Monitoring (support the existing bird monitoring programme led by Mr. Peter Bridgeford)</li> </ul>	<ul style="list-style-type: none"> <li>Monthly</li> <li>Throughout construction phase</li> <li>Bi Annual</li> </ul>	Social Manager
10.3	Marine Construction Works: Dredging, piling and rock placing	<ul style="list-style-type: none"> <li>Generation of contaminated dredged material</li> </ul>	<ul style="list-style-type: none"> <li>Sample dredged material to ensure waste disposal route is appropriate.</li> <li>Limit dredging to specific areas and during outgoing tides.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Regular sampling of material</li> </ul>	<ul style="list-style-type: none"> <li>Duration of works</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> </ul>
10.4	Marine Construction Works: Dredging, piling and rock placing	<ul style="list-style-type: none"> <li>Disruption of sea floor causing sulphur eruptions leading to reduced water quality and bad odours</li> </ul>	<ul style="list-style-type: none"> <li>Limit dredging to specific areas and during outgoing tides.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Weekly checks by the Site Manager, in particular to notice fould smells. Associated weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Project Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
10.5	Marine Construction Works: Dredging, piling and rock placing	<ul style="list-style-type: none"> <li>Integrity of the Raft Restaurant from vibrations</li> </ul>	<ul style="list-style-type: none"> <li>Further investigations into the integrity of the structure prior to piling and other marine construction activities.</li> <li>A pre-construction survey will be conducted and recorded, including a photographic report. This will be signed off by both the proponent and the owners of the Raft.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Regular visual checks during marine construction works.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> </ul>
10.6	Marine Construction Works: General activities	<ul style="list-style-type: none"> <li>Loss of fuel or oil (loss of containment or leaks), contaminating marine environment</li> </ul>	<ul style="list-style-type: none"> <li>Maintenance of vehicles.</li> <li>Spill kits suitable for marine environment to be located near activities, and staff trained to handle spills.</li> </ul>	<ul style="list-style-type: none"> <li>Regular visual checks during marine construction works.</li> <li>Weekly checks by the Site Manager, in particular to notice fould smells. Associated weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> </ul>
10.7	Marine Construction Works: General activities	<ul style="list-style-type: none"> <li>Direct and indirect impacts to marine mammals and other wildlife (disturbance, injury or mortality)</li> </ul>	<ul style="list-style-type: none"> <li>Observation of the presence of marine environment for mammals and other wildlife in the area. Hold off on any operations until wildlife has moved from the area.</li> <li>Avoid certain times of the year – dredging activities shall be</li> </ul>	<ul style="list-style-type: none"> <li>Observation of the presence of marine environment for mammals and other wildlife in the area by the MMO - surveys of entire Lagoon and surrounding the project</li> <li>Continual liaising with The Dolphin Project.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> <li>During construction phase</li> <li>Bi Annual</li> </ul>	<ul style="list-style-type: none"> <li>Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			<ul style="list-style-type: none"> <li>undertaken in winter months, from May to August to minimise impacts on sensitive feeding seasons</li> <li>– Marine works will avoid sensitive marine mammal breeding times and should be minimised between June to September.</li> <li>– Implement Method Statement.</li> <li>– Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>– Hydrophone monitoring.</li> <li>– Avian Monitoring</li> </ul>		
10.8	Marine Construction Works: General activities	<ul style="list-style-type: none"> <li>– Visual intrusion and noise impacts on the Raft Restaurant</li> </ul>	<ul style="list-style-type: none"> <li>– Install a visual screen as soon as practical to block construction view and attenuate noise.</li> <li>– Construction works to stick to schedule.</li> <li>– Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks by the Site Manager and weekly reports.</li> <li>– Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>
10.9	Marine Construction Works: General activities	<ul style="list-style-type: none"> <li>– Litter entering the marine environment: entangling animals, suffocating animals, animals consuming litter.</li> <li>– Scavenger birds dominating the area.</li> </ul>	<ul style="list-style-type: none"> <li>– Good site housekeeping.</li> <li>– Bins on and surrounding the site, which are regularly emptied.</li> <li>– Nominated person to undertake litter picking regularly.</li> <li>– Avoid food waste being thrown into the environment.</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks by the Site Manager and weekly reports.</li> <li>– Monthly Checks by the Environment and Social Manager and monthly reports.</li> <li>– Avian Monitoring.</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> <li>– Bi Annual</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>
10.10	Marine Construction Works: Lighting	<ul style="list-style-type: none"> <li>– Increased lighting: reduced local resident's amenity;</li> <li>– Impacts on birds and</li> </ul>	<ul style="list-style-type: none"> <li>– No night time working</li> </ul>	<ul style="list-style-type: none"> <li>– Avian Monitoring</li> </ul>	<ul style="list-style-type: none"> <li>– Bi Annual</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		other marine wildlife				
11	Removal of road and ground excavation works in close proximity to the sea	<ul style="list-style-type: none"> <li>Silt laden effluent entering the marine environment and increasing suspended solids, causing impacts on marine life and water quality.</li> </ul>	<ul style="list-style-type: none"> <li>Implement suitable drainage.</li> <li>Avoid undertaking specific activities during rainfall events.</li> <li>Install silt fencing is required.</li> <li>Sequencing of construction works e.g. construct marina first to provide an enclosed working area and contain sediment run off.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
12	Dewatering / pumping of groundwater	<ul style="list-style-type: none"> <li>Discharge of silty water to the environment – marine impacts</li> <li>Potential spread of contamination</li> </ul>	<ul style="list-style-type: none"> <li>Application of Method Statement</li> <li>Filter any groundwater prior to discharge to the marine environment.</li> <li>Suitable bunding and storage of oils, fuels and chemicals.</li> <li>Maintenance of plant and equipment.</li> <li>Any water discharged shall meet accepted water quality standards.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Sampling of any water to be discharged to the marine environment.</li> <li>Weekly checks by the Site Manager and weekly reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
13	Excavation during rainfall events	<ul style="list-style-type: none"> <li>Silt laden surface water entering the marine environment, increasing</li> </ul>	<ul style="list-style-type: none"> <li>Suitable drainage to prevent surface water entering the marine environment without treatment and filtration.</li> <li>Avoid specific activities during</li> </ul>	<ul style="list-style-type: none"> <li>Daily checks, weekly checks and reports by the Site Manager.</li> <li>Monthly Checks by the Environment and Social</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
		suspended solids and reducing water quality and potential impacting marine life.	high rainfall events.	Manager and monthly reports.		
14.1	Demolition activities: An existing building that is to be demolished on the site has been identified to contain asbestos cement roofing material.	<ul style="list-style-type: none"> <li>Handling and disposal of asbestos – loss of containment / spread of contamination.</li> </ul>	<ul style="list-style-type: none"> <li>Implementation of the Method Statement for the handling and disposal of asbestos. Approved registration certificate from the Department of Health.</li> <li>Removal of this material to be completed by a licenced and registered contractor specialising in asbestos removal.</li> <li>Asbestos waste shall be separated for safe disposal and disposed of to an appropriate disposal site in accordance with the Waste Management Plan.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Daily checks, weekly checks and reports by the Site Manager.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
14.2	Demolition activities	<ul style="list-style-type: none"> <li>Septic tank waste - loss of containment / spread of contamination</li> </ul>	<ul style="list-style-type: none"> <li>All contents of tanks to be emptied and disposed of appropriately, prior to removing and disposing of tanks.</li> <li>Enforcement of QCPs.</li> </ul>	<ul style="list-style-type: none"> <li>Daily checks, weekly checks and reports.</li> <li>Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>
15.1	Storage of fuel and oils	<ul style="list-style-type: none"> <li>Loss of containment, causing ground contamination</li> </ul>	<ul style="list-style-type: none"> <li>Licence and certificate to store and dispense fuel.</li> <li>Stored in a lockable area, on a</li> </ul>	<ul style="list-style-type: none"> <li>Tanks and containers to be checked daily.</li> <li>Weekly checks and reports by</li> </ul>	<ul style="list-style-type: none"> <li>Daily</li> <li>Weekly</li> <li>Monthly</li> </ul>	<ul style="list-style-type: none"> <li>Site Manager</li> <li>Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			flat impermeable area, with a bund that is capable of storing 110% of stored capacity. <ul style="list-style-type: none"> <li>- Libelled tanks and containers.</li> <li>- Any hazardous chemicals, liquids or materials to be stored on site to be in suitable storage containers, in lockable store with appropriate bunding, with an inventory.</li> <li>- Appropriate safety signs around storage area, e.g. no smoking.</li> <li>- Appropriate PPE to personnel.</li> <li>- Site Induction and appropriate training of nominated persons.</li> <li>- Site Environmental Emergency Plan – ensure up to date throughout construction works.</li> </ul>	the Site Manager. <ul style="list-style-type: none"> <li>- Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>		
15.2	Delivery of fuel and oil	<ul style="list-style-type: none"> <li>- Loss of containment, causing ground contamination</li> </ul>	<ul style="list-style-type: none"> <li>- All deliveries to be supervised.</li> <li>- Refuel in designated area, on impermeable surface away from drains, residential properties and the sea. Spill kits to be located at nominated locations around site.</li> <li>- Drip trays used where required.</li> <li>- Storage tanks to be checked prior to delivery (level and correct tank).</li> <li>- Regular checks and servicing of</li> </ul>	<ul style="list-style-type: none"> <li>- Audits of vehicles to ensure maintained and not defective.</li> <li>- Daily and Weekly checks and reports by the Site Manager.</li> <li>- Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>- Daily</li> <li>- Weekly</li> <li>- Monthly</li> </ul>	<ul style="list-style-type: none"> <li>- Site Manager</li> <li>- Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			storage containers and regular maintenance and servicing of plant and equipment. – Good house-keeping – clean vehicles regularly. – Spill kits to be located around site. – Site Induction and appropriate training of nominated persons. – Site Environmental Emergency Plan – ensure up to date throughout construction works.			
15.3	Use and maintenance of plant and equipment: Spills of fuels, oils or chemicals	– Loss of containment, causing localised ground contamination	– Spill kits in designated areas around site. – Contain and clean up spill in accordance with emergency procedures. – Report spill as soon as possible. – All plant and material to be well maintained and have appropriate containment (drip trays). – Maintenance activities of large plant and equipment shall be undertaken off site. – Site Induction and appropriate training of nominated persons. – Site Environmental Emergency Plan – ensure up to date throughout construction works.	– Daily checks of bunds and regular checks of inventories by the Site Manager. – Daily and weekly site inspections and production of report.	– Daily – Weekly – Monthly	– Site Manager – Environment and Social Manager



REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			<ul style="list-style-type: none"> <li>– Suitable PPE and equipment when handling hazardous chemicals, liquids and materials.</li> </ul>			
15.4	Delivery of cement	<ul style="list-style-type: none"> <li>– Loss of containment, causing ground contamination</li> </ul>	<ul style="list-style-type: none"> <li>– Any spills of cement shall be cleared up as soon as spill occurs.</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager to oversee all deliveries.</li> </ul>	<ul style="list-style-type: none"> <li>– Duration of delivery</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> </ul>
16	General construction activities: Energy use	<ul style="list-style-type: none"> <li>– Use of resources</li> </ul>	<ul style="list-style-type: none"> <li>– Turn off plant and equipment when not in use.</li> <li>– Regular maintenance of plant and equipment.</li> <li>– Minimise / optimise workforce travel.</li> <li>– Source materials locally.</li> <li>– Source sustainable material where possible.</li> <li>– Apply waste hierarchy and reuse and recycle.</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks and reports by the Site Manager.</li> <li>– Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>
17	General construction activities: Material use	<ul style="list-style-type: none"> <li>– Use of resources</li> </ul>	<ul style="list-style-type: none"> <li>– Source materials locally to reduce transportation.</li> <li>– Source sustainable material where possible.</li> <li>– Apply waste hierarchy and reuse and recycle. material where possible</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks and reports by the Site Manager.</li> <li>– Monthly Checks by the Environment and Social Manager and monthly reports.</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>
18	Vehicle movements on site	<ul style="list-style-type: none"> <li>– Hazards to workers (collisions leading to injuries)</li> </ul>	<ul style="list-style-type: none"> <li>– Clearly marked areas around site for worker and vehicle access.</li> <li>– Speed limit of 40km/hr.</li> <li>– Site induction and training of staff.</li> </ul>	<ul style="list-style-type: none"> <li>– Weekly checks to ensure areas are clearly marked and reports by the Site Manager.</li> <li>– Monthly Checks by the Environment and Social</li> </ul>	<ul style="list-style-type: none"> <li>– Daily</li> <li>– Weekly</li> <li>– Monthly</li> </ul>	<ul style="list-style-type: none"> <li>– Site Manager</li> <li>– Environment and Social Manager</li> </ul>

REF NO.	ACTIVITY	RISKS AND POTENTIAL IMPACTS	MANAGEMENT / MITIGATION MEASURES	MONITORING REQUIREMENTS	FREQUENCY	RESPONSIBILITY
			– Reversing of vehicles overseen with appropriate warnings (lights / sounds).	Manager and monthly reports.		

## 7. IMPLEMENTATION OF THE CONSTRUCTION-ESMP

This Construction-ESMP:

- A. Has been prepared pursuant to a contract with the proponent;
- B. Has been prepared on the basis of information provided to ECC up to January 2018;
- C. Is for the sole use of the proponent, for the sole purpose of an ESMP;
- D. Must not be used (1) by any person other than the proponent or (2) for a purpose other than an ESMP; and
- E. Must not be copied without the prior written permission of ECC.

ECC has prepared the ESMP on the basis of information provided by the proponent, specialist reports and the ESIA. These have been independently reviewed and verified by the Southern African Institute of Environmental Assessment (SAIEA).



## Construction – ESMP Annexes

Walvis Bay Waterfront Pty Ltd

PREPARED FOR



March 2018

DOCUMENT FOR GOVERNMENT APPROVAL

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## Contents

ANNEX A: DOCUMENT CHECK LIST .....	3
ANNEX B: TEMPLATE CONTACT DETAILS .....	5
ANNEX C: COMPLAINTS REGISTER TEMPLATE .....	6
ANNEX D: DAILY/WEEKLY INSPECTION REPORT .....	7
ANNEX E: MONTHLY COMPLIANCE REPORT .....	26
ANNEX F: TEMPLATE WASTE MANAGEMENT PLAN.....	29
INTRODUCTION .....	29
PRINCIPALS .....	29
WASTE MANAGEMENT ARRANGEMENTS .....	29
WASTE GENERATED .....	30
ANNEX G: MONITORING PLAN .....	32

## ANNEX A: DOCUMENT CHECK LIST

DOCUMENT	PURPOSE	REQUIRED BEFORE REQUIRED UPDATES	OWNER
Contact Details	Register of key construction personnel and their contact details, and emergency numbers.	Prior to construction. Checked monthly to ensure it is up to date	Site Manager
Site Induction Register	Register of all personnel working on site and when they undertook training.	Monthly	Site Manager
Complaints Register	Name and contact details of the complainant, date and time of the complaint, nature of complaint, action taken to resolve issues, and date of complaint handover. See Annex C	Prior to construction. Amended when complaint received or when complaint resolved.	Environmental and Social Manager
Environmental Permits: 1. Consumer Installation licence and certificate 2. Registration Certificate	Approval from competent authority to undertake specific activities: 1. Consumer Installation licence and certificate to be obtained under the Petroleum Products and Energy Act (Act 13 of 1990) and associated amendments and regulations, for the storage of two 22,000 litre fuel tanks. 2. Registration certificate from the administering authority (the Department of Health) to approve the removal of this asbestos, under Section 5 of the Atmospheric Pollution Prevention Ordinance 11 of 1976	Prior to certain activities. Annually.	Environmental and Social Manager
Weekly Compliance Report	Checklist of what should be checked on site and any non-compliance or concerns on site to be recorded, and resolution logged. See Annex D.	Completed checklist prior to construction commenced. Weekly	Site Manager
Monthly Compliance Report	The report shall contain a brief description of any areas of non-conformance with the contract specification, the reason for the non-conformance, the responsible party, the result (consequence), the corrective action taken and any necessary follow up measures required. See Annex E.	- Monthly.	Environmental and Social Manager
Plant and Equipment Register	Register of all plant and equipment on site, including the following information: <ul style="list-style-type: none"> <li>- Piece of plant and equipment;</li> <li>- Make and Model;</li> <li>- Frequency of required service and scheduled dates;</li> <li>- Dates of last maintenance and test; and</li> <li>- Notes of any issues or concerns.</li> </ul>	Completed checklist prior to construction commenced. Monthly.	Operations Manager
Method Statements	Each method statement to be listed in this table and the frequency of use to be included. Reviews of Method Statements shall occur to	Monthly	Site Manager

DOCUMENT	PURPOSE	REQUIRED BEFORE REQUIRED UPDATES	OWNER
	ensure lessons are learnt.		
Waste Management Plan	Outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. Outline any potential economical and investment requirements for the treatment and / or disposal of waste. See Annex F.	Monthly	Environment and Social Manager
Traffic Management Plan	To document designated routes for construction vehicles to and from the site, and access points. Any traffic calming measures. Specific times when construction traffic should avoid journeys.	Before construction works commences. Monthly.	Site Manager.
Fire Prevention Plan	Fire and emergency management measures, and pollution incident response management plan requirements. Identifies and concentrates on potential incidents and emergencies that could occur on the proposed project site, and describes the general policy and approach that should be followed when dealing with an emergency or incident, such as fire, explosion, spills and traffic accidents. <ul style="list-style-type: none"> <li>- The development, site plans and maps;</li> <li>- Incident identification and notification process;</li> <li>- Emergency contact details;</li> <li>- Emergency response procedures; and</li> <li>- Training requirements.</li> </ul>	Monthly	Site Manager
Environmental Emergency Plan	Set out measures that shall be implemented during an environmental emergency, including but not limited to: <ul style="list-style-type: none"> <li>- site drainage controls;</li> <li>- fuel handling procedures;</li> <li>- incident notification procedures;</li> <li>- pollution control equipment requirements; and</li> <li>- procedures for the control of dust and mud; and</li> <li>- protection measures of water body (the sea) from chemical spills or sediment laden run off.</li> </ul>	Prior to construction. Monthly.	Site Manager

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## ANNEX B: TEMPLATE CONTACT DETAILS

ROLE	NAME	CONTACT DETAILS
Project Manager		
Site Manager		
Environment and Social Manager		
Ministry of Environment and Tourism		
Ministry of Fisheries and Marine Resource		
Namibian Dolphin Project		
Namport		
Walvis Bay Ambulance		
Walvis Bay Police		
Walvis Bay Sea Rescue		
Namport fire and port control		



## ANNEX C: COMPLAINTS REGISTER TEMPLATE

NAME	CONTACT DETAILS	DATE AND LOCATION OF COMPLAINT	NATURE OF COMPLAINT	ACTION TAKEN TO RESOLVE	NOMINATED PERSON TO RESOLVE ISSUE (Signature)	DATE OF RESOLUTION / CLOSED OUT COMPLAINT

## ANNEX D: DAILY/WEEKLY INSPECTION REPORT

INSPECTION DATE: \_\_\_\_\_

CONTRACTORS ON SITE:

INSPECTION COMPLETED BY: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

SUMMARY OF CONSTRUCTION ACTIVITIES OCCURRING:

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
1.1	Worker Campsite: Set-up – Minimise loss of vegetation, keep noise levels as low as possible, screen the site, good house-keeping. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
1.2	Worker Campsite: Operations Keep noise levels as low as possible, screen the site, good house-keeping, waste collection points, sewerage management system, no unauthorized visitors.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
1.3	Worker Campsite: Reinstatement – Disturb any compacted soil. – Ensure waste is removed from site and site is reinstated back to its original condition. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
2.1	Establishment and Management of Construction site – Installation of a site boundary made of hoarding and at least 2m high. – Designated access routes and points. – Bring plant and equipment as and when required. – Suitable siting of construction office, waste collection area, and storage area for plant and equipment. – Downward lighting. – Application of good housekeeping. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
2.2	Site preparation: Removal of vegetation – Reuse of grass on other sites where sports facilities will be relocated. Where not possible, offer to local residents for reuse on their properties. – Removal and reinstatement of palm trees as soon as practicable, using a suitably qualified specialist, ensuring root protection zone is identified and managed. – Suitably qualified personnel to remove, store and reinstate trees, at the most suitable time of the year. – Any relocation of nests must be agreed with the Environment and Social Manager. – No animals or birds may be collected, caught, consumed or removed from site by the Contractor or their personnel on site. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
2.3	Site preparation: Removal of top soil – Recover, store and reuse for final landscaping. – Separate topsoil and sub soil – Appropriately store the soil in line with best practice to avoid degradation (e.g. store for no more than 12 months and in piles not exceeding 2m high, cover to protect from wind). – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
2.4	Site preparation and excavation: Disturbance / damage of undiscovered archaeological remains – Site Manager or appropriate person to oversee all ground excavation works. – In the event of a discovery, works to cease until advice from specialist is obtained.	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
2.5	Site preparation and excavation: Silty surface run-off – Suitable site drainage to avoid silty water entering the marine environment.	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
3.1	General construction activities: Generation of waste – Waste to be collected, separated and stored in appropriately marked areas / containers (e.g. wood, metals, building rubble, garden waste, domestic waste). – Waste storage areas shall be appropriately signed, well maintained and good housekeeping will be applied. – Waste will be disposed of to designated, licensed and appropriate facilities, which will be identified in the Waste Management Plan. – No waste to be burnt on site.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
4.1	Operating plant and equipment <ul style="list-style-type: none"> <li>- Avoid idling of plant and equipment (turn off when not in use)</li> <li>- Minimise the multiple use of noisy plant and equipment.</li> <li>- Where possible, position noisy plant and equipment away from residential and commercial properties.</li> <li>- Vehicles to be in good working order and well maintained and serviced in accordance with specific requirements.</li> <li>- Select equipment with lower sound power levels.</li> <li>- Site boundary fence – hoarding.</li> <li>- Contractor should be required to guarantee optimised equipment design noise levels. Implement engineering controls (e.g. silencers) in order to limit noise levels.</li> <li>- Notice to surrounding community of when noisy activities are to be undertaken.</li> </ul>	Site Manager and Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
4.2	Operating plant and equipment: Impact on workers <ul style="list-style-type: none"> <li>- Appropriate PPE – face masks if required, ear plugs</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
5.1	General construction works: excavation and moving / transporting material – Application of dust suppression measures e.g. dampening areas. – Closed site boundary fence. – Avoid certain activities during high winds. – Avoid overfilling excavated material in trucks. – Cover excavated / dredged material during transportation to Industrial Zone 14. – Limit vehicle speeds – Avoid stockpiling	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
5.2	General construction works: Tall infrastructure – Avoid high masts and cranes. – If required, keep on site for the specific activity and remove as soon as works are complete – If lighting is required, use flashing lights of colours rather than white, and avoid the use of flood lights. – Site boundary fence – hoarding, to be erected as soon as practicable	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	



Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
5.3	General construction activities: lighting: Residential amenity – Lighting shall only be used when necessary and will be designed to minimise spillage of light, and orientated away from residential properties	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
6	Construction traffic: Increase traffic volumes, noise and community severance. – Construction traffic to follow designated routes, as per Traffic Management Plan. – Construction vehicles to enter and exit site at designated locations. – Avoid construction traffic during peak times (7.30 – 9.30, 12.30 – 13.30 and 16:00 – 17:00) – No parking or idling on roads, and implement traffic management to avoid vehicles queuing on roads entering the site. – Traffic calming measures to direct flow of traffic to and from the site. – Use of banksmen to manage heavy vehicles enter and exit the site.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
7	Rerouting existing services – Prior notice of the scheduling of suspended services. Avoid sensitive times (weekends). – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
8	Closure of Esplanade Road: Loss of access road. – Early notice about road closure through notices and signs on and around Esplanade Drive. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
9	Road Upgrades: Potential diversions required and/or temporary road closures – Appropriate signs for diversions. – Early notice about road works through notices and signs on the road to be upgraded – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.1	Marine Construction Works: Dredging, piling and rock placing – increase suspended solids. – Undertake activities on outgoing tide only. – Limit works during certain conditions, e.g. when trade winds are strong – Activities limited to those agreed with Municipality. – Mr Alan Louw to oversee dredging activities. – Use soft-starts and ramp up operations. – Avoid piling and dredging between June and September. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
10.2	Marine Construction Works: Dredging, piling and rock placing - Increase noise and vibration <ul style="list-style-type: none"> <li>- Use soft-starts and ramp up operations.</li> <li>- Marine Mammal Observer to observe and identify presence of animals prior to works and to cease works if dolphins are within the predetermined safe zones.</li> <li>- Avoid piling and dredging between June and September.</li> <li>- Limit activities to prescribed durations.</li> <li>- Enforcement of QCPs.</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.3	Marine Construction Works: Dredging, piling and rock placing - Generation of contaminated dredge material <ul style="list-style-type: none"> <li>- Sample dredged material to ensure waste disposal route is appropriate.</li> <li>- Limit dredging to specific areas and during outgoing tides.</li> <li>- Enforcement of QCPs.</li> </ul>	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.4	Marine Construction Works: Dredging, piling and rock placing - Disruption of sea floor causing sulphur eruptions leading to reduced water quality and bad odours <ul style="list-style-type: none"> <li>- Limit dredging to specific areas and during outgoing tides.</li> <li>- Enforcement of QCPs</li> </ul>	Project Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
10.5	Marine Construction Works: Dredging, piling and rock placing - Integrity of the Raft Restaurant from vibrations – Further investigations into the integrity of the structure prior to piling and other marine construction activities. – Enforcement of QCPs.	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.6	Marine Construction Works: General activities - Loss of fuel or oil – Maintenance of vehicles. – Spill kits suitable for marine environment to be located near activities, and staff trained to handle spills.	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
10.7	Marine Construction Works: General activities - Direct and indirect impacts to marine mammals – Observation of the presence of marine environment for mammals and other wildlife in the area. Hold off on any operations until wildlife has moved from the area. – Avoid certain times of the year – dredging activities shall be undertaken in winter months, from May to August to minimise impacts on sensitive feeding seasons – Marine works will avoid sensitive marine mammal breeding times and should be minimised between June to September. – Implement Method Statement. – Enforcement of QCPs.	Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.8	Marine Construction Works: General activities - Visual intrusion and noise impacts on the Raft Restaurant – Install a visual screen as soon as practical to block construction view and attenuate noise. – Construction works to stick to schedule. – Enforcement of QCPs	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
10.9	Marine Construction Works: General activities - Litter entering the marine environment – Good site housekeeping. – Bins on and surrounding the site, which are regularly emptied. – Nominated person to undertake litter picking regularly. – Avoid food waste being thrown into the environment.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
10.10	Marine Construction Works: Lighting – No night time working	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
11	Removal of road and ground excavation works in close proximity to the sea – Implement suitable drainage. – Avoid undertaking specific activities during rainfall events. – Install silt fencing is required. – Sequencing of construction works e.g. construct marina first to provide an enclosed working area and contain sediment run off. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
12	Dewatering / pumping of groundwater – Application of Method Statement – Filter any groundwater prior to discharge to the marine environment. – Enforcement of QCPs.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
13	Excavation during rainfall events – Suitable drainage to prevent surface water entering the marine environment without treatment and filtration. – Avoid specific activities during high rainfall events.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
14.1	Demolition activities: An existing building that is to be demolished on the site has been identified to contain asbestos cement roofing material. <ul style="list-style-type: none"> <li>- Implementation of the Method Statement for the handling and disposal of asbestos. Approved registration certificate from the Department of Health.</li> <li>- Removal of this material to be completed by a licenced and registered contractor specialising in asbestos removal.</li> <li>- Asbestos waste shall be separated for safe disposal and disposed of to an appropriate disposal site in accordance with the Waste Management Plan.</li> <li>- Enforcement of QCPs</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
14.2	Demolition activities <ul style="list-style-type: none"> <li>- All contents of tanks to be emptied and disposed of appropriately, prior to removing and disposing of tanks.</li> <li>- Enforcement of QCPs.</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	



Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
15.1	Storage of fuel and oils <ul style="list-style-type: none"> <li>- Licence and certificate to store and dispense fuel.</li> <li>- Stored in a lockable area, on a flat impermeable area, with a bund that is capable of storing 110% of stored capacity.</li> <li>- Labelled tanks and containers.</li> <li>- Any hazardous chemicals, liquids or materials to be stored on site to be in suitable storage containers, in lockable store with appropriate bunding, with an inventory.</li> <li>- Appropriate safety signs around storage area, e.g. no smoking.</li> <li>- Appropriate PPE to personnel.</li> <li>- Site Induction and appropriate training of nominated persons.</li> <li>- Site Environmental Emergency Plan – ensure up to date throughout construction works</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
15.2	Delivery of fuel and oil <ul style="list-style-type: none"> <li>- All deliveries to be supervised.</li> <li>- Refuel in designated area, on impermeable surface away from drains, residential properties and the sea. Spill kits to be located at nominated locations around site.</li> <li>- Drip trays used where required.</li> <li>- Storage tanks to be checked prior to delivery (level and correct tank).</li> <li>- Regular checks and servicing of storage containers and regular maintenance and servicing of plant and equipment.</li> <li>- Good house-keeping – clean vehicles regularly.</li> <li>- Spill kits to be located around site.</li> <li>- Site Induction and appropriate training of nominated persons.</li> <li>- Site Environmental Emergency Plan – ensure up to date throughout construction works</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
15.3	Use and maintenance of plant and equipment: Spills of fuels, oils or chemicals <ul style="list-style-type: none"> <li>- Spill kits in designated areas around site.</li> <li>- Contain and clean up spill in accordance with emergency procedures.</li> <li>- Report spill as soon as possible.</li> <li>- All plant and material to be well maintained and have appropriate containment (drip trays).</li> <li>- Maintenance activities of large plant and equipment shall be undertaken off site.</li> <li>- Site Induction and appropriate training of nominated persons.</li> <li>- Site Environmental Emergency Plan – ensure up to date throughout construction works.</li> <li>- Suitable PPE and equipment when handling hazardous chemicals, liquids and materials</li> </ul>	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
15.4	Delivery of cement <ul style="list-style-type: none"> <li>- Any spills of cement shall be cleared up as soon as spill occurs.</li> </ul>	Site Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

Ref No.	Item	Responsibility	Construction Activity Status (Underway / Complete)	Compliant	Notes / Action Taken / Corrective Action Required
16	General construction activities: Energy use – Turn off plant and equipment when not in use. – Regular maintenance of plant and equipment. – Minimise / optimise workforce travel. – Source materials locally. – Source sustainable material where possible. – Apply waste hierarchy and reuse and recycle.	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
17	General construction activities: Material use – Source materials locally to reduce transportation. – Source sustainable material where possible. – Apply waste hierarchy and reuse and recycle. material where possible	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	
18	Vehicle movements on site – Clearly marked areas around site for worker and vehicle access. – Speed limit of 40km/hr. – Site induction and training of staff. – Reversing of vehicles overseen with appropriate warnings (lights / sounds).	Site Manager Environment and Social Manager		Yes <input type="checkbox"/> No <input type="checkbox"/> N/A <input type="checkbox"/>	

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## ANNEX E: MONTHLY COMPLIANCE REPORT

INSPECTION DATE: \_\_\_\_\_

INSPECTION COMPLETED BY: \_\_\_\_\_

APPROVED BY: \_\_\_\_\_

SUMMARY OF CONSTRUCTION ACTIVATES OCCURRING:

CONTRACTORS ON SITE:

**NON-CONFORMANCE**

AREA OF ACTIVITY:

REASON:

RESPONSIBLE PARTY

RESULT:

CORRECTIVE ACTION TAKEN:

FOLLOW-UP ACTION TO BE TAKEN:

ADDITIONAL COMMENTS:

**GOOD PERFORMANCE**

*Description of activity or action in which contract went beyond compliance towards responsible care for the environment:*

**ADDITIONAL COMMENTS**

## ANNEX F: TEMPLATE WASTE MANAGEMENT PLAN

### INTRODUCTION

The aim of this Waste Management Plan is to achieve sustainable waste management. The main purpose is to outline waste streams and identify the best treatment and disposal option for each one, applying the waste management hierarchy and avoiding as much waste as possible ending up at landfill or being burnt. In addition, it also outlines any potential economical and investment requirements for the treatment and / or disposal of waste.

This Waste Management Plan is a live document and should be updated during the annual review, which is undertaken by the Operational Manager and Environmental and Social Manager.

### PRINCIPALS

The following principles should be applied to the management of waste on site:

- The waste hierarchy (avoid, reuse, recycle, recovery, disposal) should be applied for each waste stream, so that the impact on the environment is reduced as much as possible;
- Waste collection area will be identified prior to construction activities, and demarcated and secured with appropriate fencing;
- Bins shall be emptied on a regular basis to avoid pests and bad odours;

**Table 1 – Waste Management Roles**

ROLE	INDIVIDUAL OR PARTY
Proponent	
Contractor	
Responsible person for the Waste Management Plan	

The following waste management measures shall be followed:

- Waste will be collected, separated and stored in a designated area which will be appropriately fenced and signposted to keep out unauthorised people and animals;
- Waste collection containers will be of an appropriate design to ensure that no waste can escape, and will be labelled with waste type (e.g. wood, metals, building rubble, garden waste, domestic waste);
- Waste storage areas shall be kept clean and tidy at all times;
- Bins shall be emptied regularly to avoid pests and bad odours; and
- No burning will be allowed on site.

Any hazardous material and wastes (including medical waste, if necessary) shall be managed in a safe and responsible manner so as to prevent contamination of soils, pollution of water and/or harm to people or animals as a result of the use of these materials. Hazardous and non-hazardous waste shall be stored separately at all times.

### WASTE MANAGEMENT ARRANGEMENTS

The project shall have a dedicated waste collection, sorting and pickup area. This area will be fenced off, clearly signposted and access shall be by those authorised.

*The following information shall be provided in this section:*



- Location plan of the dedicated area
- Arrangements to appropriately secure and designate the area (fencing, locked gate)
- Access arrangements
- Drainage arrangements
- Set up of the site
- Authorised personnel
- Any rules or codes of conduct

## WASTE GENERATED

Provide all waste streams, type and quantity, allowing a review to be undertaken and the most appropriate waste disposal options are identified.

**Table 2 – Waste Type and Management**

WASTE TYPE	ESTIMATED QUANTITY	WASTE MANAGEMENT	WASTE CARRIER INFORMATION AND SITE
<b>Site Clearance</b>			
Vegetation	(example only) 40 palm trees Other bushes and vegetation	Recover, store and replant palm trees Other bushes etc. give away to community or compost	Company Name: Phone No. xxx xxx xxxxx
Tarmac			
Other road products?			
<b>Demolition</b>			
Bricks	4m <sup>3</sup>	Reuse	Local community
Wood		Separate and reuse or recycle	
Metal		Separate and reuse or recycle	
Asbestos			
<b>Construction</b>			
Packaging and plastic			
Excavated material (onshore)			

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WASTE TYPE	ESTIMATED QUANTITY	WASTE MANAGEMENT	WASTE CARRIER INFORMATION AND SITE
Dredged Material	20,000m <sup>3</sup>		

## ANNEX G: MONITORING PLAN

Item	Rationale	Monitoring Area / Site Description / Details	Frequency	Phase (Construction, Operations, Decommissioning, or All)	Parameters	Quality Control Point
Potential water quality impacts from dredging activities.	<p>Dredging has the potential to smother the seafloor habitat by increase sedimentation. Release of heavy metals can have serious cumulative negative impacts on the marine environment. Release of hydrogen sulphide can cause varying degrees of anoxia resulting in mortalities of marine organisms.</p> <p>Bad odours can also arise as a result of the release of hydrogen sulphide</p>	A. Turbidity & general chemistry (sampling and analysis) of water – Immediately next to the Marina, including the access channel	A. Ongoing for the duration of construction. On-line with real time in-stream turbidity meter, data collected at predetermined intervals.	A. All	A. Turbidity & general chemistry of water	A. Yes
		B. Sediment samples – project site, access channel and lagoon entrance	B. Before construction commences and prior to dredging activities commencing. Post dredging samples also to be collected.	B. Pre and Post dredging	B. Chemical composition including heavy metals	B. Yes

Bathymetric survey	Analysis of the sea floor to determine potential impacts of siltation	Lagoon – survey area used for the ESIA plus area south of the project	Annual	All	Elevations of water level	Yes
Cetacean Monitoring - Hydrophone monitoring	To monitor the movements of dolphin movements in and out of the Lagoon  Hydrophones are used to detect dolphin use and changes in use of the Lagoon environment during construction compared to before and after impact	Located near the Raft restaurant (use existing Namibian Dolphin Project monitoring site)	Ongoing during construction	Construction	Hydrophone digital waveform characterisation to select clicks and logs the time, centre frequency, intensity and bandwidth of each cetacean click	Yes

<p>Cetacean Monitoring – Marine Mammal Observation (MMO) monitoring</p>	<p>To monitor the movements of dolphin in and out of the Lagoon during dredging activities</p>	<p>Lagoon area and Mouth of the Lagoon</p>	<p>The MMO should</p> <ol style="list-style-type: none"> <li>1) Conduct a survey of the entire Lagoon from the Salt Works to the mouth of the Lagoon daily, prior to any dredging or pile driving, to determine the presence and location of animals in the Lagoon and</li> <li>2) Keep constant watch during these activities to ensure animals are not approaching into the Lagoon near these activities when they are occurring.</li> </ol>	<p>All - Before and during dredging activities</p>	<p>Visual MMO</p> <p>(Dolphins are not in the Lagoon before dredging or pile driving occurs and</p> <p>b) not within 1000m of either activity when they are occurring)</p>	<p>Yes</p>
<p>Avian Monitoring</p>	<p>Disturbance of feeding and roosting shorebirds particularly flamingos by human activity. Participate in bi annual bird counts to determine bird use of the Lagoon and Ramsar area</p>	<p>Ramsar Site</p>	<p>Bi Annual</p>	<p>All</p>	<p>Participate in bi annual bird counts coordinated by Mr Peter Bridgeford.</p>	<p>No</p>

Groundwater – if encountered	To identify/ quantify any water quality impacts associated with dewatering, extraction or contamination from construction works	TBD	Monthly	Construction	Field water quality parameters plus chemical analysis	No
Potable Water (supplied by municipality)	To determine suitability of water for drinking	TBD – Source on site	Annual	Construction and Operations	Potable drinking water suite	No
Noise	Noise monitoring to determine impact of development on residents and surrounds	Specific locations to be determined by a noise specialist. Expected to be along KR Thomas Street, Atlantic Street and 4 <sup>th</sup> Road.	A. Quarterly  B. Annual	A. Prior to construction commencing and during construction  B. Operations	dB	No
Air Quality	Air quality monitoring to determine impact from development on residents and surrounds	Surrounding residents	Visual observations daily	Construction	Visual nuisance dust leaving the site and implement mitigation measures	Yes

<p>Potential pollution from boats</p>	<p>Monitor and control all boat users of the marina, prohibit boat users entering the Lagoon.</p> <p>Oils or chemicals resulting from accidental spills during refuelling, collisions, cleaning pose a serious threat to the ecological function of the Lagoon including seabirds.</p>	<p>Ensure spill contingency plan is in place:</p> <p>A. Containment boom and spill kits to be on site</p> <p>B. Mock emergency response drills conducted</p>	<p>A. Inspected Monthly</p> <p>B. Bi annual</p>	<p>All</p>	<p>Visual and inspections</p>	<p>No</p>
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