

# ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PROPOSED CONSOLIDATION AND REZONING OF ERVEN 3109 AND 3124 WALVIS BAY FROM “SINGLE RESIDENTIAL” TO “LOCAL BUSINESS” FOR THE CONSTRUCTION AND OPERATION OF A DOUBLE-STOREY RETAIL SHOWROOM AND OFFICES WITH A RELATED WORKSHOP AND TRAINING CENTRE; AND

CONSTRUCTION AND OPERATION OF A 20 TO 40-METRE TALL TELECOMMUNICATIONS MAST ON CONSOLIDATED ERVEN 3109 AND 3124 WALVIS BAY.

14 OCTOBER 2022

APP-0030





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**Abbreviations**

|        |   |
|--------|---|
| ANSI:  | American National Standards Institute             |
| CBD:   | Central Business District                         |
| CRAN:  | Communication Regulatory Authority of Namibia     |
| CV:    | Curriculum Vitae                                  |
| EAP:   | Environmental Assessment Practitioner             |
| EC:    | Environmental Commissioner                        |
| ECC:   | Environmental Clearance Certificate               |
| ECNS:  | Electronic Communications Network Service         |
| ECS:   | Electronic Communication Service                  |
| EMF:   | Electromagnetic Field                             |
| EMP:   | Environmental Management Plan                     |
| FCC:   | Federal Communications Commission                 |
| GHz:   | Gigahertz   |
| HF:    | High Frequency                                    |
| I&AP:  | Interested and Affected Party                     |
| IEEE:  | Institute of Electrical and Electronics Engineers |
| IUSDF: | Integrated Urban Spatial Development Framework    |
| KHz:   | Kilohertz   |
| LA:    | Local Authority                                   |
| MEFT:  | Ministry of Environment, Forestry and Tourism     |
| MHz:   | Megahertz   |
| OSHA:  | Occupational Safety and Health Administration     |
| PPE:   | Personal Protective Equipment                     |
| RF:    | Radiofrequencies                                  |
| SAR:   | Specific Absorbance Rate                          |
| VHF:   | Very High Frequency                               |
| WBM:   | Walvis Bay Municipality                           |
| WHO:   | World Health Organization                         |

**Attachments**

|             |  |
|-------------|--|
| Annexure A: | Environmental Management Plan                  |
| Annexure B: | Consent Letter from Municipality of Walvis Bay |
| Annexure C: | Proof of Consultation                          |
| Annexure D: | Screening Notice Confirmation                  |
| Annexure E: | Project Site Maps                              |
| Annexure F: | CV of EAP                                      |
| Annexure G: | List of Registered I&APs                       |

## 1. Introduction

Radio Electronic (Pty) Ltd have bought Erven 3109 and 3124 Walvis Bay to relocate their business from the industrial area to the CBD of Walvis Bay. The proponent intends to consolidate and rezone the erven to permit the construction and operation of a double-storey building containing their new retail showroom and offices with a related workshop and training centre.

The proposed land use requires the erven to be consolidated and rezoned which was recommended for approval on 12 April 2022 (Annexure B) by the Town Planner of the Walvis Bay Municipality provided that an Environmental Clearance Certificate (ECC) be obtained.

The proposed development will also include the construction and operation of a telecommunications mast to distribute certain radio frequencies and broadband (wireless internet) for customers. The proponent, through its subsidiary company (Blue Telecommunications (Pty) Ltd), holds the relevant telecommunications license from CRAN. The construction and operation of the communications mast also require an ECC.

Therefore, the purpose of this report is to obtain an Environmental Clearance Certificate (ECC) as recommended below:

[1] That an Environmental Clearance Certificate be issued to Radio Electronic (Pty) Ltd for the following listed activities:

- a. consolidation and rezoning of Erven 3109 and 3124 Walvis Bay from “Single Residential” with a density of 1 dwelling unit per 300m<sup>2</sup> to “Local Business” to permit the construction and operation of a retail showroom, offices, workshop and training centre; and
- b. construction and operation of a 20 to 40-metre tall telecommunications mast on consolidated Erven 3109 and 3124 Walvis Bay for the broadcasting of certain radio frequencies and broadband as licensed by the Communications Regulatory Authority of Namibia.

The following report will describe the site, the proposed development, the need and desirability of the application and statutory/policy support for the application for further consideration.

## 2. Terms of reference

The following terms of reference set out the approach the proponent intends to follow in undertaking the assessment in accordance with the Environmental Management Act of 2007 and the EIA Regulations:

- a) a description of the proposed project, location and receiving environment, and alternative proposals.
- b) identify relevant laws and policies for the project.

- c) advertise and consult potential I&APs, such as the Municipality of Walvis Bay and neighbours to provide an opportunity to submit comments, representations and/or objections to the proposed project.
- d) identify potential impacts the project activity will have on the receiving environment and assess their significance level.
- e) provide possible mitigation measures to be included in the EMP (Annexure A) to reduce negative impacts and/or enhance positive impacts on the receiving environment.

### 3. Project Description

#### 3.1. Proposed project

Radio Electronic (Pty) Ltd bought Erven 3109 and 3124 Walvis Bay to relocate their business to the central business district (CBD) of Walvis Bay. They intend to construct a new building which will contain their new retail showroom, offices, a workshop and training centre and a tall communications mast as shown in Figure 1.



Figure 1: Front perspective of concept building (Credit: Brynard Kotze Architects Inc).

The intention is to consolidate Erven 3109 and 3124 Walvis Bay into Portion X and rezone Portion X from “Single Residential” with a density of 1 dwelling unit per 300m<sup>2</sup> to “Local Business” in terms of the Walvis Bay Zoning Scheme and Urban and Regional Planning Act (Act No.5 of 2018). The proposed “Local Business” zoning will permit the desired land use.

The proponent specialises in marine electronics, radio and satellite communications, power systems, broadband services and consumer electronics. The products will be put on display for sale to the general public in the retail showroom and the offices will be used for the day-to-day management of the business, meetings, and receiving clients.

The ancillary workshop will be used for the installation, repair and servicing of all products sold to clients. The training centre will be used to provide technical training for staff, to provide them with the necessary expertise in products and to deliver a safe, reliable and efficient service to clients.

The construction and operation of the telecommunications mast will contain the usual send and receive antennas (HF and VHF) and microwave links to broadcast WiFi like those in homes (Wormbächer, 2022).

The frequency ranges are defined as follows:

- High Frequency (HF) ranges between 3 to 30 MHz;
- Very High Frequency (VHF) ranges between 30 and 299 MHz;
- Microwave ranges between 300 MHz and 300 GHz.

According to the Mr Wörmbächer (2022) of Radio Electronic, the telecommunication mast will not pose any health risk to the adjacent residents and the signals will not interfere with other any other equipment nearby.

The proposed telecommunications mast will be similar to existing masts in the urban area of Walvis Bay as pictured below:

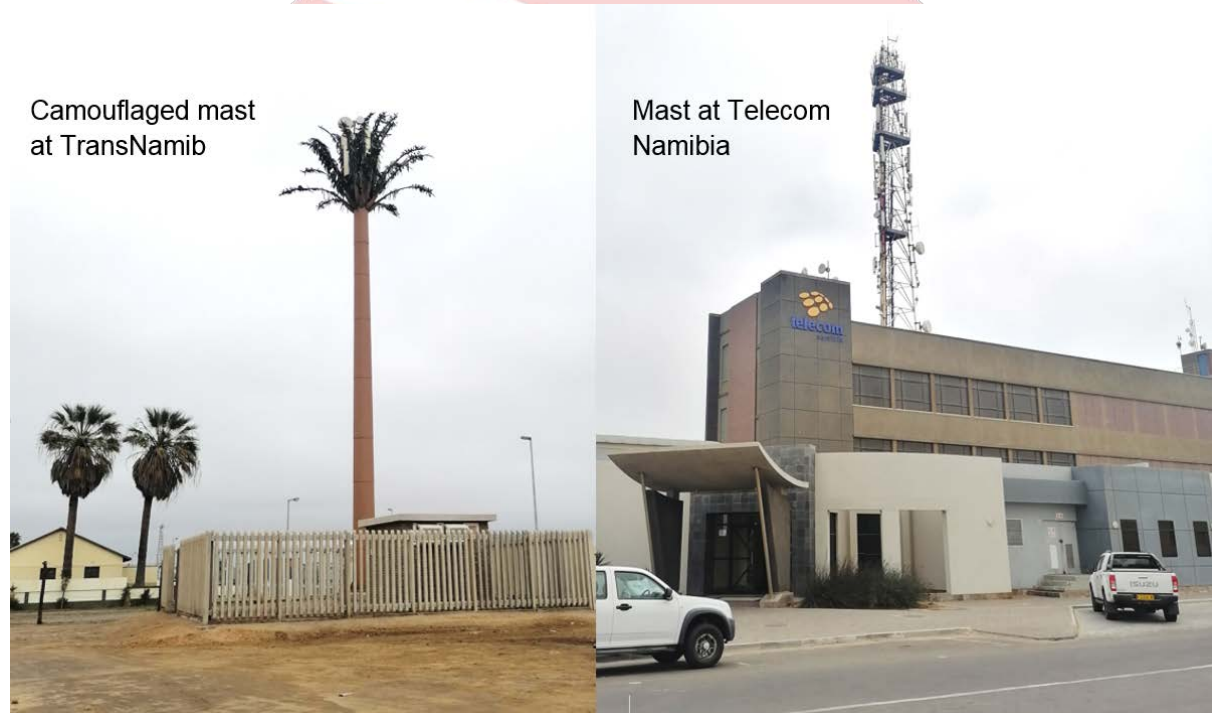


Figure 2: Other existing telecommunication masts in Walvis Bay.

The communications mast will help distribute broadband to customers through the proponent's subsidiary company called Blue Telecommunications (Pty) Ltd which operates under a Class Comprehensive ECS & ECNS telecommunication service license from the Communications Regulatory Authority of Namibia (CRAN, 2022). The company is also a fully licensed Wireless Internet Service Provider (WISP) with a growing subscriber base (Radio Electronic, 2022).

The height of the communications mast is not specified but the estimated height is between 20 to 40 metres tall (or 5 to 10 storeys). It is essential to have a tall mast so that the line of sight of signals is not blocked by other buildings. This is to improve the signal strength between the company and its subscriber base.



Figure 3: Bird's eye view of concept development (Credit: Brynard Kotze Architects Inc).

The proposed design of the building will have a modern architectural finish which will help improve the aesthetic appearance of the urban environment. The communications mast will not be camouflaged and can be visually unaesthetic. At the same time, a conspicuous red/white tower can help create a new landmark for direction and wayfinding in Walvis Bay.

Perpendicular on-site parking will be provided along Johnson Mabakeng Street which is less busy compared to Sixth Street. No parking is provided along Sixth Street to improve traffic safety, however, access to and from the site will be taken from both streets.

### 3.2. Developmental phases

The project will follow four phases of development namely the (1) Planning & Decommission Phase, (2) the Construction Phase, (3) the Operational Phase, and the (4) Decommission Phase as detailed below:

#### (1) Planning & Decommission Phase

This phase entails obtaining approvals from the relevant authorities and demolishing the existing dwelling house and outbuildings. This phase has been partially implemented as the Municipality of Walvis Bay recommended the consolidation and rezoning application for approval. The old house and outbuildings have been demolished by a suitable contractor.

This phase is deemed complete once an ECC has been issued and the Municipality of Walvis Bay has issued a Building Permit for construction to start.

#### (2) Construction Phase

This phase will include the appointment of a contractor, setting up a construction site and supporting infrastructure and sanitation for construction workers. Delivery of equipment and building materials and tools. Minor earthworks, levelling and compaction will be done followed by the digging and laying of foundations, construction of walls for each floor, and



construction of the roof. In addition, essential services such as water pipes, plumbing, electric cabling and sewerage pipelines will be installed during construction. Final touches such as plastering, the installation of windows, doors, frames, furniture, fittings and painting the building will be done.

This phase is deemed complete once the Municipality of Walvis Bay has issued a Completion and Occupation Certificate for the building.

(3) Operational Phase

The Proponent will relocate their business to their new property and continue to operate their business as usual. The Proponent will also apply to the Municipality of Walvis Bay for the usual Fitness and Business Registration certificates where applicable. Operation of the business is expected to continue in the long term (at least 20 years).

This phase is continuous and will cease to operate as dictated by the Proponent. During operation, the Proponent will strive to expand their business and apply for the necessary approvals and/or renewals as required by relevant legislation and regulations.

(4) Decommission Phase

This phase is undetermined until the constructed building needs to be demolished in the future as determined by the Proponent or the new property owner. This last phase falls beyond the scope of this report given the uncertainty of the associated impacts related to this phase.

**3.3. Listed activities**

The proposed project has been evaluated in terms of the list of activities that may not be undertaken without an Environmental Clearance Certificate as promulgated under Notice 29 of Government Gazette No.4878 dated 6 February 2012. The proposed project triggers the following listed activities:

**LAND USE AND DEVELOPMENT ACTIVITIES**

5.1. The rezoning of land from -

- (a) residential use to industrial or commercial use;

**INFRASTRUCTURE**

10.1. The construction of -

- (g) communication networks including towers, telecommunication and marine telecommunication lines and cables; and
- (j) masts of any material type and of any height, including those used for telecommunication broadcasting and radio transmission

### 3.4. Alternative proposals

Alternatives concerning the proposed activity imply different means of meeting the general development objectives of the project which may include alternatives to the site location, a non-rezoning alternative and alternative designs of the building itself. The following alternatives were considered for the proposed activity.

### 3.5. Site Alternatives

The following site alternatives were considered by the proponent:

- 1) Erf 442 Walvis Bay, 14th Road: This is the current business premises of the proponent which is situated in the industrial/harbour area of Walvis Bay. The erf (1375m<sup>2</sup>) is almost fully developed and limits further expansion. It is not situated in a typical commercial environment for walk-in customers. This is one of the reasons why the proponent wants to relocate the business to the CBD of Walvis Bay. Coordinates: 22°56'59.9"S  
14°30'13.9"E
- 2) Erf 2019 Walvis Bay, Sam Nujoma Avenue: Suitably zoned "General Business" to permit proposed development and located in a commercial environment. The property is unfortunately too large (10,000m<sup>2</sup>) and requires subdivision. The property was not available on the market. Coordinates: 22°57'34.3"S 14°29'51.4"E
- 3) Residential properties along Sixth Street and Sam Nujoma Avenue, between 5th and 10th Road: Most properties are zoned "Single Residential" with some already being rezoned to "Local Business" or "General Business". Most erven in the wider area measure ±1250m<sup>2</sup> in the area and are occupied by single-story dwelling houses and the usual outbuildings on each separate erf. Properties are suitable to be rezoned/redeveloped for business purposes in terms of Council Policy such as the IUSDF.
- 4) Erven 3109 and 3124, Sixth Street: Partially developed and suitable to be consolidated and rezoned. Provides a large erf size of 2084m<sup>2</sup> and access from two streets. Suitably located in a commercial environment for walk-in customers and close to the existing CBD. Properties were available on the market. Coordinates: 22°57'29.5"S 14°29'51.1"E

Taking into consideration of the above site alternatives, the proponent has selected option 4 as it was suitably located for their walk-in customers and close to the existing CBD. Therefore, Erven 3109 and 3124 Walvis Bay is the proponent's primary choice which they purchased in December 2021.

### 3.6. No rezoning alternative

This alternative implies that the property remains zoned "Single Residential" with a density of 1 dwelling unit per 300m<sup>2</sup>. The current zoning permits the development of a dwelling house on each erf but not a retail/office building. Due to the proximity of existing businesses and the busy street, it is no longer desirable to limit development to residential purposes only. Rezoning of property is also supported in terms of Council Policies such as the IUSDF.

Therefore, the no-rezoning alternative will not be suitable for the proponents' development objectives.

### 3.7. Design alternative

The concept design from the architect is shown in Figure 1 and Figure 3 on pages 6 - 8. No other design alternatives have been prepared to date. The design of the communications mast is visible as a red/white tower with antennas. The possibility of concealing the mast as a palm tree will be considered as a design alternative.

## 4. Description of receiving environment

This section will describe the receiving environment that may be affected by the proposed activity or which could influence or impact the development proposal. Table 7 on page 25 summarises the activity, receptor (the receiving environment) and the potential impact on the receptor.

Erven 3109 and 3124 Walvis Bay are located on the corner of Johnson Mabakeng and Sixth Street and within the wider Central Business District of Walvis Bay as shown in Figure 4 below (Locality Plan attached as Annexure E). The site coordinates are: 22°57'29.5"S 14°29'51.1"E



Figure 4: Location of Erven 3109 and 3124 Walvis Bay (in red).

Erf 3109 Walvis Bay is situated on the corner and measures 936m<sup>2</sup> in area whereas adjacent Erf 3124 Walvis Bay measures 1148m<sup>2</sup> in size - a total site size of 2084m<sup>2</sup>. This provides sufficient space to support a new development and all on-site parking requirements.



Figure 5: Boundaries of Erven 3109 and 3124 Walvis Bay (in red).

Both erven are zoned “Single Residential” in terms of the Walvis Bay Zoning Scheme as depicted in Figure 6 below. This zoning permits a dwelling unit (house) with the usual outbuildings on each erf. Neighbouring erven are zone “Single Residential”, “Local Business” and “General Business” and the location is situated on the edge of the existing CBD of Walvis Bay.



Figure 6: Current zoning of Erven 3109 and 3124 Walvis Bay and surrounding properties.

The property is well located to existing shops, businesses and offices such as, for example:

- M&M Signs (a printing shop on Erf 3110 Walvis Bay);
- Learning Nation Namibia (a toy/gift shop and house on Erf 3111 Walvis Bay);

- Bay Wash Cleaning (a chemical retailer/wash bay on Erf 3104 Walvis Bay);
- Atlantic Sea Products (offices on Erf 3212 Walvis Bay);
- Mega Stationers (a stationery shop on Erf 3057 Walvis Bay);
- Katulife Mall (offices with apartments above on Erf 3105 Walvis Bay); and
- Spar (a grocery shop on Erf 4893 Walvis Bay).

The property is also located close to the following residential properties:

- Katulife Mall Apartments (on Erf 3105 Walvis Bay).
- House above Leaning Nation Namibia (on Erf 3111 Walvis Bay).
- Houses across Sixth Street (Erven 3213 and 3214 Walvis Bay).
- Undeveloped residential properties (Erven 3122 and 3123 Walvis Bay).

The receiving urban environment has a mixture of commercial and residential land uses that vary in terms of scale and variety. There is an existing trend of residential properties being converted into shops, offices and businesses. Therefore, the proposed commercial land use and proposed design of the building will integrate well with the receiving environment.



Figure 7: View of surrounding properties (Date: 06 Oct 2022).

Erf 3109 Walvis Bay contained a dilapidated house and outbuildings as shown in Figure 8 and Erf 3124 Walvis Bay is current undeveloped as shown in Figure 9. Both erven were occupied by a business that used the property as a “mini truck port” for the parking and servicing of trucks and other smaller vehicles.

Whilst the removal of a single house reduces the overall housing stock of Walvis Bay, the house was in a poor state of condition and the industrial use of the property was deemed undesirable to nearby neighbours and visitors passing by – especially in a commercial and residential environment. The house had no heritage value or architectural significance to warrant retaining or protection. Redevelopment of the site will help promote compact city development which is more environmentally friendly compared to urban sprawl.



Figure 8: Photo of the former house on Erf 3109 Walvis Bay (Date: 18 Jan 2022).



Figure 9: Photo showing the undeveloped status of Erf 3124 Walvis Bay (Date: 18 Jan 2022).

Since becoming the new property owner, the Proponent has demolished the house and has removed the undesirable land uses on the property which was well received by nearby neighbours.

The property is currently undeveloped and unused as shown in Figure 10 on the next page. Any new development on the site will help improve the aesthetic appearance of the urban environment and make residents excited about development happening in the town.



Figure 10: Photos of site after house being demolished (Date: 06 Oct 2022).

Table 1 below provides a summary of the property.

Table 1: Property description.

|                             |  |
|-----------------------------|--|
| <b>Registered Name</b>      | Erf No.3109 Walvis Bay<br>Erf No.3124 Walvis Bay   |
| <b>Size</b>                 | Erf 3109 = 936m <sup>2</sup><br>Erf 3124 = 1148m <sup>2</sup><br>Total size = 2084m <sup>2</sup>   |
| <b>Street Address</b>       | C/o Sixth Street and Johnson Fwafwa Mabakeng Street (previously 9th Road)                          |
| <b>Location</b>             | See Locality Plan ( <b>Annexure E</b> ).<br>GPS Co-ordinates: 22°57'29.5"S 14°29'51.1"E            |
| <b>Current Zoning</b>       | Single Residential   |
| <b>Density</b>              | One dwelling unit per 300m <sup>2</sup> (1:300m <sup>2</sup> )                                     |
| <b>Bulk Factor</b>          | Not applicable   |
| <b>Land Use</b>             | Erf 3109 = former dilapidated dwelling + outbuilding (demolished)<br>Erf 3124 = vacant/undeveloped |
| <b>Proponent</b>            | Radio Electronic (Proprietary) Limited<br>Company Number 2020/0233                                 |
| <b>Local Authority Area</b> | Municipality of Walvis Bay   |

## 5. Identification of laws and policies

Table 2 provides an overview of legislation and its application to the proposed project whereas Table 3 summarises relevant policies that apply to the project.

Table 2: Laws or legislation applicable to the project.

| Law or Policy   | Provision or application  | Authority                                      |
|---|---|--|
| Namibia Constitution First Amendment Act of 1998  | Article 95(l): The State shall actively promote and maintain the welfare of the people by promoting sustainable development.  | National Government                            |
| State of Emergency COVID-19 Regulations: Namibian Constitution  | Provides restrictions on movement, public gatherings, and nonessential businesses (restaurants) to slow down the spread of COVID-19 as published in the Government Gazette from time to time.   | Ministry of Health and Social Services (MOHSS) |
| Walvis Bay Zoning Scheme is underwritten by the Urban and Regional Planning Act, 2018 (Act No.5 of 2018). | The proposed rezoning requires approval from the Local Authority (LA) and Urban and Regional Planning Board (URP Board).  | LA & URP Board.                                |
| Environmental Management Act, 2007 (Act No.7 of 2007) and EIA Regulations.                                | The rezoning of land from residential to commercial is a listed activity which requires an Environmental Clearance Certificate to be undertaken. The Ministry of Environment, Forestry and Tourism (MEFT) is the custodian of this Act.   | MEFT   |
| Communications Act (Act No.8 of 2009) and all related Regulations.  | The Communications Regulatory Authority of Namibia (CRAN) has been established in terms of this Act, as an independent regulator. The Act aims to regulate telecommunications services and networks, broadcasting services, postal services, and the use and allocation of radio spectrum in Namibia. The proponent has or will obtain the relevant license to operate a communications mast from CRAN.                             | CRAN   |
| Labour Act, 2007 (Act No.11 of 2007), as amended.   | The proponent and Contractor need to adhere to the provisions of this law. This Act provides regulations to protect employees from unfair labour practices and prescribes labour disputes in the workplace. Employers must adhere to minimum wages and promote a healthy working environment, free from discrimination. The Ministry of Labour, Industrial Relations and Employment Creation (MLIREC) is the custodian of this Act. | MLIREC   |
| Atmospheric Pollution Prevention Ordinance, 1976 (APPO:1976).   | Provides general guidance on pollution control such as dust. This ordinance requires any construction site to adopt the best practicable method to prevent dust from spreading and causing health issues.   | MEFT   |
| Public and Environmental Health Act, 2015 (Act No.1 of 2015).   | To promote public health and well-being and to protect individuals and communities from public health risks. The proposed development is subject to the provisions of the Act and inspections from the Local Authority.   | LA   |



| Law or Policy  | Provision or application  | Authority |
|--|---|-----------|
| Walvis Bay Municipality: Solid and Hazardous Waste Management Regulations of 2011. | Provide matters on how solid and hazardous waste must be managed and disposed of, restrictions on littering and dumping, offences and penalties and incidental matters as a means to prevent pollution to the environment.  | LA        |
| Walvis Bay Municipality: Business Registration Regulations of 2003.                | Provide matters to the registration of businesses in the Local Authority area and restrictions to operate a business without a Certificate of Fitness and Registration Certificate, offences and penalties and incidental matters.  | LA        |
| Walvis Bay Municipality: Standard Building Regulations of 1995 as amended.         | Provide matters to building approval and control of building activities to protect residents and the environment, offences and penalties and incidental matters. Any person who intends to erect any building, whether permanent or temporary, must make a written application to the Local Authority for approval. | LA        |
| All relevant Local Authority Regulations and Municipal by-laws.                    | The project is subject to all relevant regulations as required by the various departments of the Local Authority.   | LA        |

Table 3: Policies or guidelines relevant to the project.

| Policy  | Provision or application   | Authority          |
|---|--|--------------------|
| Walvis Bay Urban Structure Plan (IUSDF)   | This plan indicates the future growth and structure plan of Walvis Bay up to 2030 with policies on land use planning. The IUSDF was reviewed to determine whether the proposed activity is broadly in line with the future planning of Walvis Bay. | LA                 |
| Draft Procedures and Guidelines for EIA and EMP of 2008.  | A procedure and guideline document serves as a reference and supportive text only  | MEFT               |
| Walvis Bay Biodiversity Report of 2008 (WBBR:2008).   | Provides a comprehensive summary and map of sensitive biodiversity areas and zoning in the local district. It was determined that the project is not located within or close to a sensitive biodiversity area.                                     | LA                 |
| Walvis Bay Climate Strategic Action Plan.   | Provides action plans on how Town Planning can help mitigate climate change. Promote redevelopments, reduce urban sprawl, and minimise land consumption.   | LA                 |
| Sustainable Urban Energy Planning: A handbook for cities and towns in developing countries. (SUEP: 2004). | Provides a comprehensive list of case studies to implement energy-saving measures to conserve natural resources with city planning.  | ICLEI & UN-Habitat |

## 6. Public Consultation Process

### 6.1. Steps taken to notify potential interested and affected parties

The following steps were taken to notify potential interested and affected parties of the proposed application:

**1) Notice in the Gazette for 1 Week.**

A notice was published in Government Gazette No.7764 dated 15 March 2022.

**2) Notices in 2x Newspapers for 2 Weeks.**

Notices were published in the Namibian and the Republikein on 8 and 15 March 2022.

**3) Notice on Site.**

An A2 notice was placed on the corner of Sixth Street and Johnson Mabakeng Street and was on display from 08 March to 07 April 2022.

**4) Notice at the Local Authority**

A notice was placed on the notice board of the Walvis Bay Municipality and was on display from 08 March to 07 April 2022.

**5) Notice to neighbouring landowners**

The owner/occupants of Erven 3057, 3104, 3105, 3110, 3111, 3123, 3212 and 3213 Walvis Bay were notified by registered mail and email on 10 March 2022.

**6) Background Information Document**

Potential interested and affected parties were given the opportunity to download the complete application (or Background Information Document) from [www.sp.com.na/projects](http://www.sp.com.na/projects). The BID was also shared with the Department of Water, Waste and Environmental Management on 29 April 2022 via email.

**6.2. Proof of consultation**

Please refer to Annexure C for proof of consultation.

**6.3. List of registered interested and affected parties**

Please refer to Annexure G for the list of registered interested and affected parties.

**6.4. Summary of issues raised by interested and affected parties**

Written comments, representations and concerns were received from the owners of Erven 3212, 3111 and 3213 Walvis Bay as summarised provided in Table 4. A response from the Proponent and Stewart Planning is also provided in the table below.

None of the comments received are direct objections to the proposed consolidation and rezoning application but rather concerns related to safety during the construction and operational phase of the development. These concerns will be addressed by the Proponent and/or appointed contractor.

Table 4: Comments received with response from the Proponent and EAP.

| <b>Comments received from interested and affected parties</b>                     | <b>Response from The Proponent</b>  | <b>Comment from EAP (Stewart Planning)</b>                          |
|---|---|---|
| <b>Comment from the owner of Erf 3212 Walvis Bay [received on 10 March 2022]:</b> | <b>No comment received from the owner of Erven 3109 &amp; 3124 Walvis Bay</b> | The written support from the owner of Erf 3212 Walvis Bay is noted. |

| Comments received from interested and affected parties  | Response from The Proponent   | Comment from EAP (Stewart Planning)   |
|---|---|---|
| <p>Thanks Johann</p> <p>I take it one only responds with objections or comments. ASFP has neither of the two and actually welcomes the removal of the scrapyard and supports commercial development.</p> <p>Regards<br/>Peter Carlson<br/>Atlantic Seafood Processors</p>   |   | <p>Previously, Erf 3124 Walvis Bay was used for the parking and storage of trucks and other scrap material.</p> <p>These unwanted 'industrial' activities in a commercial environment has been removed by the new owner which has a positive impact surrounding area.</p> <p>Johann Otto<br/>Stewart Planning</p>   |
| <p><b>Comment/concern from the owner of Erf 3111 Walvis Bay [received on 10 March 2022]:</b></p> <p>Hi Johann</p> <p>Thank you for the email.</p> <p>I only have 2 concerns with this:</p> <ol style="list-style-type: none"> <li>1. Will the radio mast they plan to build have any health issues from the radio frequencies it emits? Also will it have any interferences with 4G cellular signal or wifi signals?</li> <li>2. The other concern is the training centre they are building, how tall will the building be? We built so high so our house on top would be relatively safer from wall climbing criminals, if they build 1 or 2 stories high training centre next to us, that will act as a ladder for someone to scale our wall. Will they be able to shift the building slightly away from the wall so it won't act as a step ladder or have it closer to the 3110 erf?</li> </ol> <p>Regards,<br/>Chao-lin</p> <p><b>Response from the owner of Erf 3111 Walvis Bay [received on 5 April 2022]:</b></p> <p>Hi Johann</p> | <p><b>Response from the owner of Erven 3109 &amp; 3124 Walvis Bay [received on 5 April 2022]:</b></p> <p>Hi Johann,</p> <p>Please find my answers to Chao-lin's questions below.</p> <ol style="list-style-type: none"> <li>1. Our communications mast will pose no health issues what-so-ever. We will host normal VHF communication antennae, one seldomly used HF antenna, some receive antennae and some microwave links on there. The microwave links are the same everyone uses for home wifi. The signals will also not interfere with any other equipment close by.</li> <li>2. The training facility will be double story, however, this will most probably only cover part of the back of MM signs. The back of learning nation will only be single story or possible 1m higher than single story. Shifting the building away from the wall would unfortunately not be an option for us.</li> </ol> <p>Kind regards<br/>Jörn Wormsbächer<br/>Radio Electronic</p> | <p>It is noted that the owner of Erf 3111 Walvis Bay does not object but has raised concerns which are addressed as follows:</p> <ol style="list-style-type: none"> <li>1. The safety concern of radio frequencies are noted. Erection of the communications mast is not granted by the Municipality of Walvis Bay as part of the proposed consolidation and rezoning application. Instead, the relevant license is granted by the Communications Regulatory Authority of Namibia (CRAN) to erect the communications mast and desired radio frequencies. Any health issues, real or potential, that are identified prior to or during operation should be lodged with the owner and CRAN and appropriate remedial action must be taken as determined by the relevant authority.</li> <li>2. The proposed "Local Business" zoning will permit a height of up to three storeys with a building line of 3 metres from the rear boundary. Given that Learning Nation stands four storeys tall with zero building line relaxation</li> </ol> |

| Comments received from interested and affected parties   | Response from The Proponent   | Comment from EAP (Stewart Planning)  |
|--|---|--|
| <p>Thank you for the feedback, we don't really have objections and we are glad someone will develop the neighbourhood. We are just hoping during their designing phase, they will consider our safety and avoid building platforms to ease the scaling of our walls.</p> <p>Regards,<br/>Chao-lin</p>  |   | <p>from the rear boundary, the same benefits should be given to Radio Electronic.</p> <p>In any case, the training centre will be a double storey (equal to or less than 8 metres) which should not create a safety concern for the adjacent owner.</p> <p>Johann Otto<br/>Stewart Planning</p>  |
| <p><b>Comment/concern the owner of Erf 3212 Walvis Bay [received on 14 March 2022]:</b></p> <p>[Translated from Afrikaans to English]</p> <p>Afternoon Johann</p> <p>Thank you for writing to me.</p> <p>I am not going to submit complaints and objections, but I would like to bring the following to your attention:</p> <p>What worries me is that I have been living in the house for 14 years and there has never been any burglaries at my house. I live alone with my children so the builders at the construction site will be a concern for my safety especially since the development is more than one floor and people will have free vision into and around my house.</p> <p>Another concern is construction activity on weekends and the noise that does not stop after hours. Construction traffic will increase in front of my entrance which will give rise to potential problems in the future.</p> <p>Regards<br/>Anchen Visser</p> | <p><b>Response from the owner of Erven 3109 &amp; 3124 Walvis Bay [received on 5 April 2022]:</b></p> <p>Hi Johann,</p> <p>Responding to the "recommendation" below.</p> <p>Unfortunately we can't predict what the workers of the contractor will or will not do with the information they gather from looking around while constructing a double story building.</p> <p>I also wouldn't know how to limit the visibility. I will however mention the concern to the contractor, once we get to that stage. We are planning on allowing the contractors enough time to finish the construction by working within normal working hours.</p> <p>Kind regards<br/>Jörn Wormsbächer<br/>Radio Electronic</p> | <p>It is noted that the owner of Erf 3212 Walvis Bay does not object but raised concerns which have been brought to the owner's attention.</p> <p>These concerns will be addressed during the construction phase of the project but are not directly relevant to the proposed consolidation and rezoning application.</p> <p>Any issues encountered during construction should be lodged with the owner and appointed contractor so that reasonable remedial steps can be taken to resolve any potential conflict or safety concerns.</p> <p>Some of the concerns raised are practical to implement by the owner/contractor whereas some concerns are more difficult to address.</p> <p>Johann Otto<br/>Stewart Planning</p> |

In conclusion, no written objections (only concerns) were received against the proposed activity.

## 7. Health and Safety of Telecommunication Masts

During public consultation, a neighbour raised a concern about whether the telecommunications mast will have any health issues from the radio frequencies it will emit. According to the proponent, the proposed “communications mast will pose no health issues what-so-ever” (Wormbacher, 2022). To help answer/clarify this concern, desktop research was undertaken to determine whether there is a health risk or not.

Cleveland and Ulcek (FCC, 1999), Bortkiewicz (2019), and the National Cancer Institute (2022) provide a good overview of the technology and research that has been done to determine potential impacts on public and occupational health and safety.

Before determining the impacts, it is important to understand the various technologies which emit radio frequencies (or “RF”) such as radio- and microwaves. Radio- and microwaves fall within the wider electromagnetic spectrum along with visible light as shown in Figure 11.

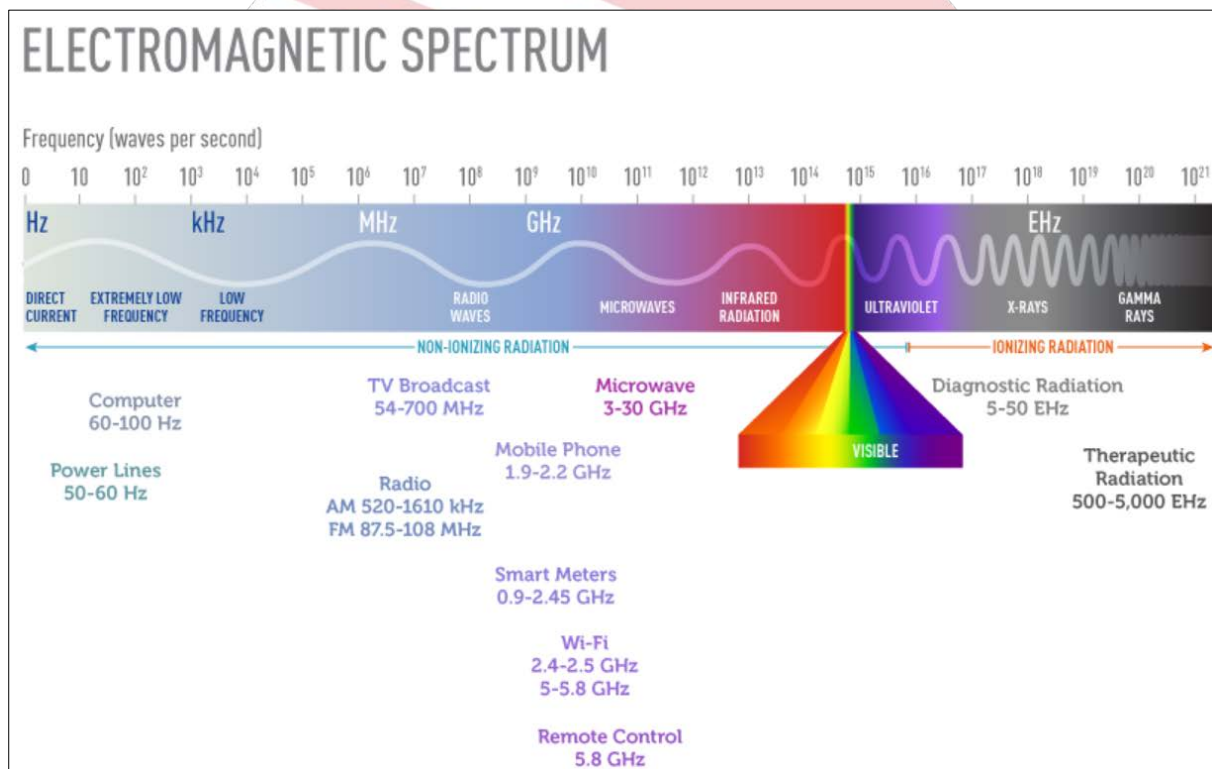


Figure 11: The Electromagnetic Spectrum (Credit: National Cancer Institute, 2022).

The diagram represents all of the possible frequencies of electromagnetic energy or electromagnetic fields (or “EMF”). It ranges from extremely long wavelengths such as power lines, and extremely short wavelengths such as x-rays and gamma rays.

Radio- and microwaves fall more or less in the same range as cellular phones, wireless internet (WiFi), smart metres and remote controls and have a lower frequency compared to infrared, visible light and ultraviolet light.

In general terms, the shorter the wavelength, the higher the frequency of exposure and the need to limit such exposure. For example, using sunblock to block the ultraviolet rays from sunlight.

The longer the wavelength, the lower the frequency of exposure which means a person can be exposed to such radiation for a long time without experiencing any noticeable impacts such as cellular phones or WiFi.

Radio- and microwaves are used in a wide range of applications such as broadcasting radio stations, television, cellular networks, and the internet such as home WiFi (Bortkiewicz (2019). High frequency waves (2.45 GHz) are used in microwave ovens to transfer energy to water molecules which can generate heat in water-rich materials such as foods (FCC, 1999:3-4, NIH, 2022). The general public is in close contact with RF and EMF emissions in their everyday lives which has led to numerous studies on their potential impacts on human health.

According to Cleveland and Ulcek (FCC, 1999:6), exposure to high levels of RF energy can be harmful due to the ability to heat biological tissue rapidly – this is the principle by which microwave ovens cook food. The most sensitive receptors for exposure are the eyes and male reproductive organs which can be protected.

Exposure decrease with increasing distance from the source of emission, therefore, the levels of RF energy encountered by the general public, are far below levels necessary to produce significant health impacts. However, technicians may come close to high RF sources such as masts where safety limits to exposure can be exceeded. In such cases, safety measures must be undertaken (FCC, 1999:7; NIH, 2022).

At certain frequencies, the human body can absorb RF energy which can cause potential harm. For example, a far-field source of RF energy, a frequency of between 80-100 MHz can be wholly absorbed by the human body. This is known as “specific absorption rate” or “SAR” and is only a potential health hazard at certain frequency ranges. For public safety, the most restrictive exposure limits are in the frequency range of 30-300 MHz where the human body absorbs the most RF energy (FCC, 1999:7).

In some rare cases, microwaves can also generate a “hearing” effect such as a clicking or buzzing sound. These occur under very specific conditions of frequency and signal modulation. This “hearing” effect is not recognised as a health hazard, and the conditions under which it occurs would be rarely encountered by members of the public (FCC, 1999:7-8).

There are also several studies conducted on “non-thermal” effects such as changes to the immune system, neurological effects, behavioural effects, and a potential link between RF exposure and cancer. Most of these studies are not conclusive and/or could not be replicated independently (FCC, 1999:8).

Telecommunication masts emit a low EMF intensity over a long time, therefore, precise exposure is difficult to measure and assess. Most research studies are based on subjective symptoms from the general public and there is a need to use a better methodology to study the effects (Bortkiewicz, 2019).

While RF-EMF energy might have a general impact on people, whether or not such impacts may indicate a human health hazard is presently unknown (FCC, 1999:8). According to the World Health Organization (2005), no major public health risks have emerged from several decades of EMF research but uncertainties remain and this view is supported by Bortkiewicz (2019). It is recommended to use precautionary principles when new sources of emissions are planned and installed.

Several standards-setting organisations have provided safety guidelines to mitigate any potential health risks. For example, the safety standards of ANSI (American National Standards Institute) and IEEE (Institute of Electrical and Electronics Engineers) which have been developed by experts, are widely used in the United States and other countries (FCC, 1999:10-11). The Federal Communications Commission (FCC) has adopted safety guidelines for RF exposure which are partly based on the ANSI/IEEE safety standards.

Due to the comparatively “low” frequency of radio- and microwaves, and the potential distance between the source and the general public, it is clear that people on the ground are less exposed than workers who are tasked to repair or replace the antenna. Nonetheless, safety guidelines can be used to reasonably mitigate any potential health and safety impacts.

Some safety guidelines include the following (also included in the EMP):

- Adhering to restrictive limits on exposure, especially in the VHF range of 30-299 MHz; the range where the human body absorbs most of the RF energy.
- Adopting RF-EMF exposure guidelines as published by the FCC/ANSI/IEEE or any other similar safety guidelines.
- Telecommunication masts should have restricted access from the general public.
- Antennas should be turned off prior to repairs or replacements from the technical team.

In conclusion, it is unlikely that the telecommunications mast will cause any potential health impacts or detriment to the neighbourhood provided that the proponent adheres to standard safety guidelines and procedures.

## **8. Identification of Potential Impacts**

During public participation and the scoping exercise, potential impacts were identified which is linked to the proposed activity and/or a sensitive receptor. The potential impacts have been identified among three phases namely:

1. Planning & Decommission Phase (see Table 5 below);
2. Construction Phase (see Table 6 on page 24).
3. Operational Phase (see Table 7 on page 25).

Table 5: Planning & Decommission Phase: List of Potential Impacts Numbered P1 to P10.

| IMPACT IDENTIFICATION: PLANNING & DECOMMISSION PHASE |  |   |   |
|--|--|---|---|
| No.  | Activity   | Receptor  | Potential Impact  |
| P1   | Proposed business land use.  | Surrounding business land uses, offices, shops, houses and apartments.              | <b>Land Use Compatability</b><br><b>Positive:</b> The proposed business land use and height are considered compatible in a business/residential urban environment                                     |
| P2   | Notification of proposed rezoning and land use and public participation.   | General public and neighbouring properties.   | <b>Public Input</b><br><b>Positive:</b> Interested and Affected Parties did not raise any objections (only concerns) to the proposed development. Redevelopment of the site was considered desirable. |
| P3   | Demolition of the former dilapidated dwelling house and removal of trucks. | Surrounding property owners.  | <b>Neighbourhood Amenity</b><br><b>Positive:</b> General improvement of neighbourhood amenities such as cleanliness and appearance. Potential increase in property value.                             |
| P4   | Demolition of the formerly dilapidated dwelling house.                     | High levels of poverty and homelessness and a general shortage of housing.          | <b>Removal of Housing Stock</b><br><b>Negative:</b> Removal of a potential shelter for the most vulnerable people in Walvis Bay.  |
| P5   | Appointment of the contractor(s) for demolition activity.                  | High unemployment rates in Walvis Bay.  | <b>Employment Creation</b><br><b>Positive:</b> Creates short-term employment opportunities for local contractors and workers. Employment indirectly reduces poverty and crime in general.             |
| P6   | Payment of betterment fee and monthly payments.                            | Lack of Council revenue sources for the general upkeep and maintenance of the town. | <b>Council Revenue Generation</b><br><b>Positive:</b> Increase in Council revenue due to payment of betterment fees and increased business rates, taxes and service charges.                          |
| P7   | Demolition of the formerly dilapidated dwelling house.                     | No heritage status or cultural value to the building.                               | <b>Cultural Impacts</b><br><b>Positive:</b> No heritage or cultural significance has been destroyed.  |
| P8   | Future decommissioning of the building by the proponent or new owner.      | Neighbouring properties and residents.  | <b>Decommission Impacts</b><br><b>Negative:</b> Similar construction-related impacts have been identified in Table 6.   |

Table 6: Construction Phase: List of Potential Impacts Numbered C1 to C8.

| IMPACT IDENTIFICATION: CONSTRUCTION PHASE |  |  |   |
|---|--|--|---|
| No.                                       | Activity   | Receptor   | Potential Impact  |
| C1  | Loud noise is generated from vehicles, machinery, drilling and compactors. | Adjacent residents and construction workers without PPE. | <b>Construction Noise Impacts</b><br><b>Negative:</b> Construction activity will generate noise, potentially disturb residents and can be harmful to persons working with heavy machinery and equipment without PPE.  |
| C2  | Improper disposal of building rubble and waste.                            | Site, street and neighbourhood.                          | <b>Construction Waste Management</b><br><b>Negative:</b> Illegal dumping of building rubble can create a public nuisance by nature of its odours, dust, the attraction of vermin or disease vectors, or damage to the environment through pollution or degradation. |
| C3  | Accidental spillage of hazardous waste such as oil, paint or wet cement.   | Site, street and neighbourhood.                          | <b>Hazardous Waste Management</b><br><b>Negative:</b> Water paint, oil leakages from heavy vehicles or equipment, and spillage of wet cement can pollute the environment and be a health risk to construction workers and residents.                                |



| IMPACT IDENTIFICATION: CONSTRUCTION PHASE |   |  |  |
|---|---|--|--|
| No.                                       | Activity  | Receptor   | Potential Impact   |
| C4  | Excavation of Borrow Pits and/or Earthworks   | Flat and level site.                               | <b>Topsoil Management</b><br><b>Positive:</b> Little to no earthworks will be required to level the site prior to construction. No borrow pits are required.   |
| C5  | Lack of sanitation facilities, clean drinking water, warning signs and safety training. | Construction workers and visitors from the public. | <b>Sanitation, Health and Safety Impacts</b><br><b>Negative:</b> Lack of sanitation and clean drinking water can create a health risk. Lack of first aid training and awareness of potential injuries can create a safety risk.    |
| C6  | Generation of dust particles from compaction or release of dry cement.                  | Construction workers without PPE.                  | <b>Dust Impacts</b><br><b>Negative:</b> Generation of dust during compaction and/or particles from cement or other related construction activity can negatively impact the health and safety of workers.                           |
| C7  | Labour disputes, proper wages, gender discrimination, and unsafe working environments.  | Construction workers especially female workers.    | <b>Socio-economic Impacts</b><br><b>Negative:</b> Lack of proper compensation and/or unsafe working sites, and unfair gender recruitment, can be harmful to the well-being and health of employees.                                |
| C8  | Movement of heavy vehicles to and from the site. Delivery of building material.         | Access to other residential properties.            | <b>Construction Traffic Impacts</b><br><b>Negative:</b> Heavy vehicles will increase traffic congestion and potentially reduce access to residential driveways.  |
| C9  | Construction of multiple-storey buildings and the use of building platforms.            | Owners of Erven 3111 and 3212 Walvis Bay           | <b>Security and Privacy Impacts</b><br><b>Negative:</b> Adjacent residents have expressed their concern for their safety and privacy for workers that can look into their property and scale their walls using building platforms. |

Table 7: Operational Phase: List of Potential Impacts Numbered O1 to O11.

| IMPACT IDENTIFICATION: OPERATIONAL PHASE |   |   |   |
|--|---|---|---|
| No.                                      | Activity  | Receptor  | Potential Impact  |
| O1                                       | Operation of new building premises.                               | Adjacent apartments and houses.                 | <b>Operational Noise Impacts</b><br><b>Negative:</b> An increase in traffic activity may potentially disturb nearby residents during normal business hours.                                     |
| O2                                       | The proposed modern design of the building.                       | Poor neighbourhood appearance and townscape.    | <b>Aesthetic Impacts</b><br><b>Positive:</b> Proposed building design (excluding the telecommunications mast) will have a positive aesthetic impact on the receiving environment.               |
| O3                                       | Appointment of permanent employees to operate the business.       | High unemployment rates in Walvis Bay.          | <b>Employment Creation</b><br><b>Positive:</b> Creates long-term employment opportunities in the local retail and service industry. Employment indirectly reduces poverty and crime in general. |
| O4                                       | Increase in water and electrical consumption.                     | Scarce water and energy resources.              | <b>Water and Energy Management</b><br><b>Negative:</b> The proposed development will increase electrical and water consumption which are scarce resources in Namibia.                           |
| O5                                       | Lack of proper toilet facilities or lack of cleaning/maintenance. | General public health and convenience.          | <b>Public Sanitation Impact</b><br><b>Negative:</b> A potential lack of clean toilets within the proposed building can create a public health risk for office workers and/or visitors.          |
| O6                                       | Property access and sight lines.                                  | Busy Sixth Street and associated traffic risks. | <b>Access and Traffic Impacts</b><br><b>Positive:</b> Access can be taken from two street frontages to improve property access and the flow of on-site traffic.                                 |
| O7                                       | Parking of vehicles and deliveries.                               | Large site size and wide road reserve.          | <b>Parking Impacts</b><br><b>Positive:</b> All parking can be provided on-site and there is potential for on-street parking as well.  |

| IMPACT IDENTIFICATION: OPERATIONAL PHASE |  |  |  |
|--|--|--|--|
| No.                                      | Activity   | Receptor                                   | Potential Impact   |
| O8                                       | Disposal of fats, oils and grease (FOG). General increase in the effluent. | Sewerage system network and effluent load. | <b>Sewerage Impacts</b><br><b>Negative:</b> Disposal of FOG can potentially clog pipes, create bad odours and can cause sewer backups.   |
| O9                                       | Improper disposal of bulk solid waste and management.                      | Site, street and neighbourhood.            | <b>Business Waste Management</b><br><b>Negative:</b> Lack of bulk waste containers can result in overfilled containers and a public nuisance and/or damage to waste containers.                |
| O10                                      | Residents travelling along Sixth Street or Johnson Mabakeng Street.        | Lack of urban quality and aesthetics.      | <b>Aesthetic Impression Impact</b><br><b>Positive:</b> The aesthetic design of the building will generate a positive first impression and increase the urban quality of the urban environment. |
| O11                                      | Emission of radio- and microwaves from telecommunications mast.            | Nearby residents and the general public.   | <b>Public Health and Safety</b><br><b>Positive:</b> Radio- and microwaves are not expected to generate a hazardous health and safety risk to the general public.                               |
| O12                                      | Emission of radio- and microwaves from telecommunications mast.            | Technical repair team of the company.      | <b>Occupational Health and Safety</b><br><b>Negative:</b> Radio- and microwaves may affect employees who work close to active antennas.  |

## 9. Need and desirability of the project

The proposed development of Erven 3109 and 3124 Walvis Bay is considered needed and desirable due to the following reasons:

- [1] Radio Electronic is a well-established business in Walvis Bay and the development of its new retail showroom will allow the company to expand their operational capacity and service delivery.
- [2] The redevelopment of the property will help improve the aesthetic quality of the urban environment and help increase property value. This will create a positive impression of Walvis Bay.
- [3] Redevelopment generates job opportunities in the local construction industry and stimulates sales in related retail outlets and can help sustain employment levels. Work opportunities help mitigate negative socio-economic impacts such as poverty, crime and homelessness.
- [4] The site is located within the existing CBD of Walvis Bay and serves as a strategic location for walk-in customers and the location is more central for the distribution of their broadband and radio services.

In conclusion, the proposed consolidation, rezoning and development are considered needed and desirable and can be supported in principle.

## 10. Impact assessment

The following section will contain a description and assessment of the significance of any effects, including cumulative effects, that may occur as a result of undertaking the activity.

### 10.1. Methodology

The assessment of impacts is based on methods published in Namibia and South Africa (Directorate of Environmental Affairs, 2008: 42; DEAT, 2002). Each identified impact is evaluated systematically in terms of its magnitude and extent in area, the duration and frequency of occurrence, the reversibility on the environment, and the acceptability from interested and affected parties. The average grading is then multiplied by the probability of and direction to determine a final numerical value.

This value determines the significance which ranges from highly negative (-3) to highly positive (+3) as indicated on the following scale:

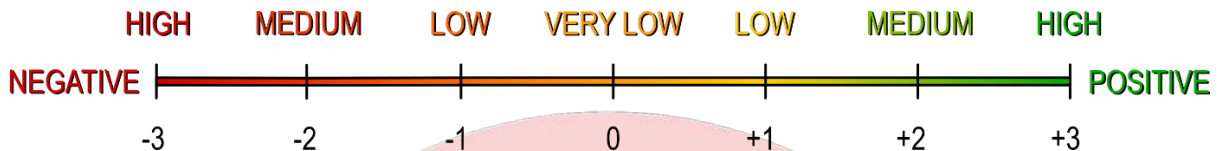


Table 8 provides a definition and overview of each significance level and Table 9 is a summary of the criteria used, their definition and the grading scale.

Table 8: Definition of each significance level.

| SIGNIFICANCE LEVEL                           | DEFINITION  | GRADE |
|--|---|-------|
| <b>-VERY LOW</b><br>or<br><b>+VERY LOW</b>   | Impacts that affect a tiny area or population, and hardly modify the environment. Biological and socio-economic aspects continue to function normally. Positive or negative effects are trivial and non-existent, and no mitigation is required.  | ±0    |
| <b>-LOW</b><br>or<br><b>+LOW</b>             | Impacts that affect a small area or population, and slightly modify the environment. Biological and socio-economic aspects continue to function sustainably without mitigation. Positive and negative effects are minor and almost unnoticeable. Mitigation is cost-efficient and easy to implement.  | ±1    |
| <b>-MEDIUM</b><br>or<br><b>+MEDIUM</b>       | Impacts affect a larger area or population and modify the environment to some extent. Biological and socio-economic aspects continue to function sustainably with mitigation. Positive and negative effects are noticeable and important. Mitigation is costly but can be implemented.  | ±2    |
| <b>-HIGH</b><br>or<br><b>+HIGH</b>           | Impacts that affect a wide area or population and heavily modify the environment. Biological and socio-economic aspects continue to function on an unsustainable basis for negative impacts. Both positive and negative impacts are major and apparent. Mitigation is expensive and sometimes impossible to implement.  | ±3    |
| <b>-VERY HIGH</b><br>or<br><b>+VERY HIGH</b> | Impacts that affect a massive area or large population and severely modify the environment. Biological and socio-economic aspects will stop functioning or continue on an unsustainable basis for negative impacts. Both positive and negative impacts are foremost and apparent. The cost of mitigation will outweigh the benefits.  | ±4    |
| <b>-MAJOR</b><br>or<br><b>+MAJOR</b>         | Impacts that affect a regional or international scale and a massive population. It will completely change the environment and biological and socio-economic aspects will completely change and discontinue to function, even with mitigation. Both positive and negative impacts have major implications which warrant special consideration. Negative impacts may be too difficult and expensive to mitigate and does should not continue. | ±5    |

Table 9: Summary of criteria, definition and grading.

| CRITERION            | DEFINITION   | GRADE |
|----------------------|--|-------|
| <b>MAGNITUDE</b>     | Magnitude defines the scale and ability of an impact to cause a change in the environment which is measured from a very low (0) to a very high (5) scale of change.  |       |
| Very Low             | The impact has little to no change in the size or value of an environmental feature.   | 1     |
| Low                  | The impact has a small change in the size or value of an environmental feature.  | 2     |
| Moderate             | The impact has a moderate and noticeable change on the environment.  | 3     |
| High                 | The impact has a large and noteworthy change in the size or value of an environmental feature.   | 4     |
| Very High            | The impact has a major and significant change in the size or value of an environmental feature.  | 5     |
| <b>EXTENT</b>        | Extent defines the ability of an impact to affect a certain geographic area which can range from on-site (1) to an international (5) level.  |       |
| On-site              | The impact is limited to the boundaries of the project site within a 50-meter radius.  | 1     |
| Local                | The impact affects the local surrounding environment within a 500-meter radius.  | 2     |
| Urban                | The impact affects the wide urban area within a 5 km radius  | 3     |
| Regional             | The impact is extensive and felt on a regional or national scale within the borders of the country.  | 4     |
| International        | The impact is widespread, cross-border cutting, and felt on an international level.  | 5     |
| <b>DURATION</b>      | Duration specifies how long an impact and effect will endure which can last from very short (1) to very long (5) duration.   |       |
| Very Short           | The impact can last less than a day or week.   | 1     |
| Short                | The impact can last a few months or less than a year or during the construction phase only.  | 2     |
| Medium               | The impact can last between 1 to 10 years or during the operational phase only.  | 3     |
| Long                 | The impact can last more than 10 years and close to the end of the operational phase.  | 4     |
| Very Long            | The impact can last from up to 100 years or more and beyond the decommissioning phase.   | 5     |
| <b>FREQUENCY</b>     | Frequency defines how many times an impact will occur over time which can range from a very low (1) to a very high (5) rate of occurrence.   |       |
| Very Low             | The impact occurs only once or has a very low number of occurrences over the project life cycle.   | 1     |
| Low                  | The impact occurs infrequently or has a low number of occurrences in a year.   | 2     |
| Medium               | The impact occurs occasionally or has a medium number of occurrences in a month.   | 3     |
| High                 | The impact occurs often or has a high number of occurrences in a few days or a week.   | 4     |
| Very High            | The impact occurs frequently with a very high number of occurrences in an hour or day.   | 5     |
| <b>REVERSIBILITY</b> | Reversibility is the ability of the receiving environment to restore itself with or without human intervention and is measured from a low (1) to high cost (5).  |       |
| Low Cost             | The impact has a high rate of reversibility or the environmental health will restore itself to its natural state at a fast rate with little to no cost.  | 1     |
| Medium Cost          | The impact has a medium rate of reversibility or the environmental health can be restored to its natural state but with human intervention at a reasonable rate and cost.  | 3     |
| High Cost            | The impact has a low rate of reversibility (if not irreversible) or the environmental health can be restored to its natural state at a slow rate but it will be difficult or expensive to rehabilitate.          | 5     |
| <b>ACCEPTABILITY</b> | Acceptability shows the level of tolerance from the public which can range from being acceptable (1) to unacceptable (5) depending on the response received from interested and affected parties.                |       |
| Acceptable           | The impact is acceptable when no objections or concerns have been noted during public participation and/or the impact does not pose a potential risk to public health and safety.                                | 1     |
| Manageable           | The impact is manageable when a small number of objections or concerns have been noted during public participation and/or the impact has a small potential risk to public health and safety.                     | 3     |
| Unacceptable         | The impact is unacceptable when many objections or concerns have been noted during public participation and/or the impact poses a major potential risk to public health and safety.                              | 5     |
| <b>PROBABILITY</b>   | Probability is the likelihood of a potential impact happening as predicted which can range from a very low (0%) to a very high (100%) chance of occurring. The probability is multiplied by the average grading. |       |
| Very Low             | The impact will not occur with a probability of 0%.  | 0%    |
| Low                  | The impact is unlikely to occur with a low probability of say ±25%.  | 25%   |
| Medium               | The impact is expected to occur with a medium probability of say ±50%.   | 50%   |
| High                 | The impact is likely to occur with a high probability of say ±75%.   | 75%   |
| Very High            | The impact will occur with a probability of 100%.  | 100%  |
| <b>DIRECTION</b>     | Direction determines whether an impact will have a positive (+) or a negative (-) impact on the environment and is multiplied by the average grading to determine whether the impact is beneficial or not.       |       |
| Positive             | Positive impacts have beneficial, useful, and desirable effects on the receiving environment.  | (+)   |
| Negative             | Negative impacts have adverse, costly and undesirable effects on the receiving environment.  | (-)   |

## 10.2. Assessment of potential impacts

The identified impacts are evaluated according to their magnitude, extent, duration, frequency, reversibility and acceptability to obtain an average grading. This grading is multiplied by the probability and direction to calculate the final grading and significance level before mitigation measures are implemented.

Table 10 lists the planning and decommission impacts numbered P1 to P8 (see Table 5 on page 24) and their associated evaluation and determination of significance level before any mitigation.

Table 10: Planning and decommission phase and assessment of impacts before mitigation.

| IMPACT ASSESSMENT BEFORE MITIGATION: PLANNING & DECOMMISSION PHASE |                |              |             |               |                  |                 |                 |                   |                 |                                 |                                      |
|--|----------------|--------------|-------------|---------------|------------------|-----------------|-----------------|-------------------|-----------------|---------------------------------|--------------------------------------|
| Impact No.   | Magnitude      | Extent       | Duration    | Frequency     | Reversibility    | Acceptability   | Average grading | Probability       | Direction       | Final grading before mitigation | Significance level before mitigation |
| P1   | High<br>4      | Local<br>2   | Long<br>4   | High<br>4     | Medium Cost<br>3 | Manageable<br>3 | 2.83            | Medium<br>50%     | Positive<br>(+) | +1.4                            | +LOW                                 |
| P2   | Moderate<br>3  | On-site<br>1 | Short<br>2  | Low<br>2      | Low Cost<br>1    | Manageable<br>3 | 2.0             | Very High<br>100% | Positive<br>(+) | +2.0                            | +MEDIUM                              |
| P3   | Very High<br>5 | Urban<br>3   | Medium<br>3 | Medium<br>3   | Medium Cost<br>3 | Manageable<br>3 | 3.33            | High<br>75%       | Positive<br>(+) | +2.5                            | +HIGH                                |
| P4   | Very High<br>5 | Urban<br>3   | Medium<br>3 | Low<br>2      | Low Cost<br>1    | Acceptable<br>1 | 2.50            | High<br>75%       | Negative<br>(-) | -1.9                            | -MEDIUM                              |
| P5   | High<br>4      | Urban<br>3   | Short<br>2  | Very Low<br>1 | Low Cost<br>1    | Acceptable<br>1 | 2.00            | Very High<br>100% | Positive<br>(+) | +2.0                            | +MEDIUM                              |
| P6   | Moderate<br>3  | Urban<br>3   | Medium<br>3 | Low<br>2      | Medium Cost<br>3 | Manageable<br>3 | 2.83            | Very High<br>100% | Positive<br>(+) | +2.8                            | +HIGH                                |
| P7   | Low<br>2       | On-site<br>1 | Medium<br>3 | Low<br>2      | Low Cost<br>1    | Acceptable<br>1 | 1.67            | Very High<br>100% | Positive<br>(+) | +1.7                            | +MEDIUM                              |
| P8   | High<br>4      | On-site<br>1 | Short<br>2  | High<br>4     | Low Cost<br>1    | Manageable<br>3 | 2.50            | Very High<br>100% | Negative<br>(-) | -2.5                            | -HIGH                                |

Table 11 lists construction-related impacts numbered C1 to C9 (see Table 6 on page 24) and their associated evaluation and significance level.

Table 11: Construction phase and assessment of potential impacts before mitigation.

| IMPACT ASSESSMENT BEFORE MITIGATION: CONSTRUCTION PHASE |                |              |            |                |                  |                   |                 |                   |                 |                                 |                                      |
|---|----------------|--------------|------------|----------------|------------------|-------------------|-----------------|-------------------|-----------------|---------------------------------|--------------------------------------|
| Impact No.  | Magnitude      | Extent       | Duration   | Frequency      | Reversibility    | Acceptability     | Average grading | Probability       | Direction       | Final grading before mitigation | Significance level before mitigation |
| C1  | High<br>4      | Local<br>2   | Short<br>2 | Very High<br>5 | High Cost<br>5   | Manageable<br>3   | 3.00            | Very High<br>100% | Negative<br>(-) | <b>-3.0</b>                     | <b>-HIGH</b>                         |
| C2  | High<br>4      | On-site<br>1 | Short<br>2 | Very High<br>5 | Medium Cost<br>3 | Manageable<br>3   | 3.00            | Very High<br>100% | Negative<br>(-) | <b>-3.0</b>                     | <b>-HIGH</b>                         |
| C3  | Very High<br>5 | On-site<br>1 | Short<br>2 | Medium<br>3    | Medium Cost<br>3 | Unacceptable<br>5 | 3.17            | Very High<br>100% | Negative<br>(-) | <b>-3.2</b>                     | <b>-HIGH</b>                         |
| C4  | Moderate<br>3  | Urban<br>3   | Short<br>2 | Low<br>1       | Low Cost<br>1    | Acceptable<br>1   | 1.83            | Very High<br>100% | Positive<br>(+) | <b>+1.8</b>                     | <b>+MEDIUM</b>                       |
| C5  | High<br>4      | Urban<br>3   | Long<br>4  | Very High<br>5 | Medium Cost<br>3 | Manageable<br>3   | 2.00            | Very High<br>100% | Negative<br>(-) | <b>-2.0</b>                     | <b>-MEDIUM</b>                       |
| C6  | Moderate<br>3  | Local<br>2   | Short<br>2 | High<br>4      | High Cost<br>5   | Manageable<br>3   | 3.17            | Very High<br>100% | Negative<br>(-) | <b>-3.2</b>                     | <b>-HIGH</b>                         |
| C7  | Very High<br>5 | Urban<br>3   | Short<br>2 | Very Low<br>1  | Medium Cost<br>3 | Unacceptable<br>5 | 3.17            | Very High<br>100% | Negative<br>(-) | <b>-3.2</b>                     | <b>-HIGH</b>                         |
| C8  | Moderate<br>3  | Local<br>2   | Short<br>2 | Very High<br>5 | Low Cost<br>1    | Manageable<br>3   | 2.67            | High<br>75%       | Negative<br>(-) | <b>-2.0</b>                     | <b>-MEDIUM</b>                       |
| C9  | Moderate<br>3  | Local<br>2   | Short<br>2 | High<br>4      | Medium Cost<br>3 | Manageable<br>3   | 2.83            | High<br>75%       | Negative<br>(-) | <b>-2.1</b>                     | <b>-MEDIUM</b>                       |

Table 12 lists operational-related impacts numbered O1 to O11 (see Table 7 on page 25) and their associated evaluation and significance level.

Table 12: Operational phase and assessment of potential impacts before mitigation.

| IMPACT ASSESSMENT BEFORE MITIGATION: OPERATIONAL PHASE |               |              |             |                |                  |                   |                 |                   |                 |                                 |                                      |
|--|---------------|--------------|-------------|----------------|------------------|-------------------|-----------------|-------------------|-----------------|---------------------------------|--------------------------------------|
| Impact No.   | Magnitude     | Extent       | Duration    | Frequency      | Reversibility    | Acceptability     | Average grading | Probability       | Direction       | Final grading before mitigation | Significance level before mitigation |
| O1   | Moderate<br>3 | Local<br>2   | Long<br>4   | Very High<br>5 | Low Cost<br>1    | Acceptable<br>1   | 2.67            | Medium<br>50%     | Negative<br>(-) | <b>-1.3</b>                     | <b>-LOW</b>                          |
| O2   | High<br>4     | Urban<br>3   | Long<br>4   | Medium<br>3    | Low Cost<br>1    | Acceptable<br>1   | 2.67            | Very High<br>100% | Positive<br>(+) | <b>+2.7</b>                     | <b>+HIGH</b>                         |
| O3   | Low<br>2      | Urban<br>3   | Long<br>4   | Low<br>2       | Medium Cost<br>3 | Acceptable<br>1   | 2.50            | Very High<br>100% | Positive<br>(+) | <b>+2.5</b>                     | <b>+HIGH</b>                         |
| O4   | Very Low<br>1 | Urban<br>3   | Medium<br>3 | Very High<br>5 | Medium Cost<br>3 | Acceptable<br>1   | 2.67            | High<br>75%       | Negative<br>(-) | <b>-2.0</b>                     | <b>-MEDIUM</b>                       |
| O5   | Low<br>2      | On-site<br>1 | Medium<br>3 | Low<br>2       | Low Cost<br>1    | Manageable<br>2   | 1.83            | Medium<br>50%     | Negative<br>(-) | <b>-0.9</b>                     | <b>-LOW</b>                          |
| O6   | Low<br>2      | Local<br>2   | Medium<br>3 | High<br>4      | Low Cost<br>1    | Acceptable<br>1   | 2.17            | High<br>75%       | Positive<br>(+) | <b>+1.6</b>                     | <b>+MEDIUM</b>                       |
| O7   | Moderate<br>3 | On-site<br>1 | Long<br>4   | Very High<br>5 | Low Cost<br>1    | Acceptable<br>1   | 2.50            | High<br>75%       | Positive<br>(+) | <b>+1.9</b>                     | <b>+MEDIUM</b>                       |
| O8   | Moderate<br>3 | Urban<br>3   | Short<br>2  | High<br>4      | Medium Cost<br>3 | Manageable<br>3   | 3.00            | Very High<br>100% | Negative<br>(-) | <b>-3.0</b>                     | <b>-HIGH</b>                         |
| O9   | Moderate<br>3 | Local<br>2   | Short<br>2  | High<br>4      | Medium Cost<br>3 | Manageable<br>3   | 2.83            | Medium<br>75%     | Negative<br>(-) | <b>-2.1</b>                     | <b>-MEDIUM</b>                       |
| O10  | Low<br>2      | Urban<br>3   | Long<br>3   | Very High<br>5 | Medium Cost<br>3 | Manageable<br>3   | 3.17            | High<br>75%       | Positive<br>(+) | <b>+2.4</b>                     | <b>+MEDIUM</b>                       |
| O11  | High<br>4     | On-site<br>1 | Long<br>4   | Very High<br>5 | High Cost<br>5   | Unacceptable<br>5 | 4.0             | Very High<br>100% | Negative<br>(-) | <b>-4.0</b>                     | <b>-HIGH</b>                         |

## 11. Environmental Management Plan

Please refer to Annexure A for the Environmental Management Plan (EMP) and recommended mitigations for each potential impact.

## 12. Conclusion

Given the proposed land use activity and the positive impact of development, the proposed development is not expected to generate a significant negative impact on the receiving urban environment. The proposed activity can be supported from an environmental point of view as no objections (only concerns) were received during the public consultation exercise. The Municipality of Walvis Bay recommended the consolidation and rezoning application for approval on 12 April 2022, on condition that an ECC is issued.

If all mitigation measures are implemented as provided in the EMP, it is expected that all of the negative impacts can be reduced and in some cases, the positive impacts can be enhanced.

The EMP document should be provided to all responsible stakeholders and be used as an on-site reference document during all phases of the proposed development.

## 13. Recommendation

Based on the findings of this report, the following is recommended:

- [1] That an Environmental Clearance Certificate be issued to Radio Electronic (Pty) Ltd for the following listed activities:
- a. consolidation and rezoning of Erven 3109 and 3124 Walvis Bay from “Single Residential” with a density of 1 dwelling unit per 300m<sup>2</sup> to “Local Business” to permit the construction and operation of a retail showroom, offices, workshop and training centre; and
  - b. construction and operation of a 20 to 40-metre tall telecommunications mast on consolidated Erven 3109 and 3124 Walvis Bay for the broadcasting of certain radio frequencies and broadband as licensed by the Communications Regulatory Authority of Namibia.

Yours sincerely,



Johann Otto

**STEWART PLANNING**



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END OF REPORT