

nor the socio-economic level is being created.

Mitigation

To ensure that the correct information is presented to the General Public and Interested and Affected Parties. To ensure that the correct procedures are followed during the public participation process with correct information in order to ensure transparency.

12.3 Phase 3: Construction Phase

The development of infrastructure involves significant investment in assets which last over a long period and often sits within wider-ranging plans for development. New infrastructure development can bring significant benefits, including the opportunity to build in such a way as to meet the challenges posed by climate change and to enhance sustainability. It can, however, also have significant costs on the environment, both in its construction and use. Some costs can be addressed and reduced through the planning and design processes and opportunities should be sought to maximize both direct and indirect benefits.

12.3.1. ENVIRONMENTAL MANAGEMENT PLAN

12.3.1.1 Earth works Installation of infrastructure

With the construction phase it is inevitable that the site will be experiencing a great amount of disturbance. In order to lay the sewer lines and electrical cables that will be vital for effective service delivery it will be needed to dig trenches to accommodate the aforesaid. No development in modern times will be complete without these essential services being installed.

Mitigation

That the initial planning phase be followed correctly as to avoid unnecessary disturbance of the land that might cause unstable soil conditions in the construction phase. Plan the construction of these services in phases to avoid a clash of movement for the different services. Perform regular checks on the demarcation of areas to be disturbed in order to avoid unnecessary cut and fill actions to be performed. Preapproval of actions to be cleared by the onsite Environmental Consultant.

12.3.1.2. Construction of the street

With the construction of internal driveways there are always the possibility of spillage of "Tar" onto the property itself and areas surrounding the property. This will have the undesired effect of unsightly polluted areas. Streets are vital to any layout and the disturbance of the site is inevitable in this sense.

Mitigation

In order to avoid such negative effects, it was decided to interlock the proposed streets as opposed to Tar streets. This will have a lower maintenance cost and is a much cleaner form of constructing streets. The storage area of interlocks to be demarcated and movement between the storage site and the areas of construction to be planned and demarcated. All unusable interlocks to be stored on site adjacent to interlock storage area and to be disposed of at a site identified by the Municipality of Swakopmund to their satisfaction.

12.3.1.3. Storm Water

Although storm water is not really an issue along the coast it is always good practice to anticipate heavy rainfall events. Storm water can have the undesired effect of damaging properties causing pollution of the surrounding area.

Mitigation

Plan and design proper storm water system to ensure the proper runoff of storm water at designated areas that will not be detrimental to both the community and the natural environment.

12.3.1.4 Improper disposal of bulk solid waste and management.

The lack of disposal sites and areas will greatly contribute to the overall pollution of the area directly impacting the natural environment and the surrounding community. It is good practice to ensure the availability of sufficient disposal sites that area controlled and monitored. On site facilities are of great importance in this sense and also designated areas identified by the Municipality of Swakopmund for large volumes when the onsite disposal sites are reaching the capacities.

Mitigation

Ensure that the site is well supplied with waste containers in order to reduce the possibility of unnecessary dumping. Identify designated dumping areas of the Municipality of Swakopmund to dump unwanted debris in large volumes. Regular site inspections and meetings to ensure that the site is being kept clean. The onsite environmental practitioner to do regular checks and actively organize the removal of such bins and materials to the satisfaction of the Municipality of Swakopmund.

12.3.1.5 Vehicular Movement

Unregulated vehicular movement to, from and around the site could disturb the surrounding natural landscape causing unsightly irreparable damage.

Mitigation

Clearly demarcate the access route to the site to avoid creating unnecessary new access routes to the site since the site is rather extensive. Have the site demarcated in order to contain movement within the site. Proper consultation to be done with the different role-players to ensure that only site disturbance takes place and no unnecessary movement is allowed outside the demarcated site.

12.3.1.6 Dust Pollution

Dust pollution is always a concern on site as dry loose sand creates dust cloud when driven over multiple times. In this case, with the prevailing South West winds, very little dust pollution is foreseen and the wind will be of a very low nature due to blockage of wind from neighbouring buildings and properties.

Mitigation

It is suggested that the roads being used within the development site be dampened with water to decrease the dust clouds that might arise from vehicular movement. PPE is also of importance to the

contractors and it must be ensured that all personnel have the required PPE at their disposal at all times.

12.3.1.7 Noise Pollution

Noise pollution is inevitable on any construction site but if unmanaged it can be a cause of concern to the surrounding area.

Mitigation

Plan and coordinate the use of machinery as to allow for minimal use. Proper planning should eliminate the unnecessary running of machines. Ensure that all personnel have the required PPE at their disposal at all times. Proper planning during the planning phase will most effectively deal with the unnecessary duplication of unnecessary vehicular movement.

12.3.1.8. Lack of sanitation facilities

The lack of sanitation facilities can pose as a serious health risk. It may cause personnel to relieve themselves at various places creating bad odors and unhygienic surroundings.

Mitigation

As part of the service contract between the developer and the contractors it should be ensured that proper onsite sanitation facilities are present to avoid any unwanted acts of self-relievement to occur at any given place on the site.

13. Responsibilities of Different Role-Players

Erongo Regional Electrical Distributor Company (Pty) Ltd (Proponent/Developer) is ultimately responsible for the implementation of the EMP. The Proponent may delegate this responsibility at any time, as they deem necessary, from construction, operation and maintenance before handover of infrastructure. The implementation of this EMP requires the involvement of several key individuals, each fulfilling a different but vital role to ensure sound environmental management during each phase of these developments. The following positions and their respective responsibilities are outlined below:

13.1. The Developer/Proponent (Erongo Red Electrical Distributors)

Responsibility: To implement the final EMP document approved by the Environmental Commissioner before the commencement of the Construction phase and to ensure that the proposed development complies with the Environmental Management Act's requirements and the Environmental Clearance given.

13.2. The Proponent's Representative

If the Proponent does not manage all aspects of the planning & design, construction, and operation & maintenance phase activities, referred to in this EMP, they should assign this responsibility to a suitably qualified individual to oversee the activities. The Proponent may decide to assign the role of a Proponents Representative to one person for all phases. Alternatively, the Proponent may decide to assign a separate PR for each developmental phase of the project.

During the Planning & Design and Construction (tender preparation) Phase, the Representative will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorizations have been obtained.
- Developing, managing implementation of, and maintaining all Development Guidelines.
- To ensure the contractor signs the EMP before the commencement of the development.
- Ensure that the management requirements inform the planning and design of the relevant infrastructure developments (i.e., that these requirements are considered during the Planning and Design Phase, not as an afterthought); and
- Ensure that the management requirements inform the preparation of tender documents for the construction of the relevant infrastructure developments.

During the Construction, Operation and Maintenance Phases the Proponent Representative shall assist the Environmental Control Officer where necessary and will have the following responsibilities regarding the implementation of this EMP:

- Ensuring that the necessary legal authorizations and permits have been obtained by the Contractor.
- Assisting the Contractor in finding environmentally responsible solutions to problems with input from the Environmental Officer where necessary.
- Management and monitoring of individuals and/or equipment on-site in terms of compliance with the EMP.
- Issuing fines for the transgression of site rules and penalties for contravention of the EMP; and
- Providing input into the Environmental Officers ongoing internal review of the EMP. This review report should be submitted every month to the Proponent.

13.3. Environmental Control Officer

The Environmental Control Officer should be a competent person appointed by the Proponent. The Environmental Control Officer is the Developer's on-site representative primarily responsible for the monitoring and review of on-site environmental management and implementation of the EMP by the Contractor. If no Environmental Control Officer is appointed then all duties will fall upon the Proponent.

Responsibility:

- Assisting the Proponents Representative in ensuring that the necessary legal authorizations have been obtained.
- Management and facilitation of communication between the Proponents Representative, Proponent, the Contractor, and I&APs about this EMP and matters incidental thereto.
- Conduct monthly site inspections of all construction and/or infrastructure maintenance areas about compliance with this EMP.
- Monitor and verify adherence to the EMP (audit the implementation of the EMP) and verify that environmental impacts are kept to a minimum.
- Taking appropriate action if the specifications of the EMP are not adhered to.

- Assisting the Contractor in finding environmentally responsible solutions to problems.
- Advising on the removal of person(s) and/or equipment not complying with the provisions of the EMP in consultation with the Proponents Representative.
- Recommending the issuing of fines for transgressions of site rules and penalties for contraventions of the EMP; and
- Undertaking an annual review of the EMP and recommending additions and/or changes to the document.

13.4. The Contractor & Sub-contractor/s

It is envisaged that various contractors might be appointed at various times for various tasks throughout the life cycle (construction through to operation & maintenance phase) of this project. To ensure sound environmental management, the relevant sections of this EMP should be included in all contracts of work outsourced thus legally binding all appointed contractors and sub-contractors.

Responsibility:

- To comply with the Environmental Authorization and undertake construction activities in an environmentally sensitive manner and rehabilitation of the site.
- To undertake good housekeeping practices during the duration of the project.
- To ensure that adequate environmental awareness training takes place in the employees' language of choice.

13.5. The Environmental Assessment Practitioner

The Environmental Assessment Practitioner is responsible to conduct the required Environmental Application which includes compiling an EMP for the proposed development. The EMP is to be submitted with the scoping EA report as supporting documents to the application for an ECC to the Environmental Commissioner of the Ministry of Environment and Tourism. This EMP will be used by Contractors and Engineers as well as the Proponent in guiding them during the construction and operation of the townships to ensure that the impacts on the environment are limited or avoided altogether.

14. Environmental Awareness Training

All contractors should ensure that adequate environmental awareness training of senior site personnel takes place and that all construction workers and new employees receive an induction presentation on the importance and implications of the EMP before the work commencing. The presentation should be conducted by the ECO, in the employees' language of choice.