

# ENVIRONMENTAL MANAGEMENT PLAN

FOR THE PROPOSED TOWNSHIP ESTABLISHMENT OF ONYUULAYE PROPER AND ONYUULAYE EXTENSION 1 IN ONYUULAYE SETTLEMENT IN ONYUULAYE CONSTITUENCY, OSHIKOTO REGION



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## LIST OF ABBREVIATIONS

<b>TERM</b>	<b>DEFINITION</b>
ECO	Environmental Control Officer
RoD.	Record of Decision
EO	Environmental Officer
RE	Resident Engineer
ELO	Environmental Liaison Officer
PPE	Personal Protective Equipment
EMP	Environmental Management Plan
EIA	Environmental Impact Assessment

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# 1. INTRODUCTION AND BACKGROUND

The Oshikoto Regional Council proposes to establish two townships in Onyuulaye settlement to be known as Onyuulaye Proper and Extension 1 with ±550 erven and related infrastructure on 102 hectares of land of Portions 1 and 2 of the Farm Onyuulaye Town and Townlands No. 1120, Onyuulaye Settlement, Oshikoto Region.

Nghivelwa Planning Consultant has been appointed to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the proposed townships establishment of Onyuulaye Proper and Extension 1 on Portions 1 and 2 of the Farm Onyuulaye Town and Townlands No. 1120. The Environmental Impact Assessment has been conducted to meet the requisites of Namibia's Environmental Management Act (No. 7 of 2007).

The Environmental Impact Assessment was conducted to meet the requirements of Namibia's Environmental Management Act, 2007 (Act No. 7 of 2007). An EIA may be defined as: a formal process to predict the environmental consequences of human development activities and to plan appropriate measures to eliminate or reduce adverse effects and to augment positive effects.

The purpose of the EMP report is to proactively address potential problems before they occur. This will ensure that unnecessary damage to the environment during the construction phase is avoided. Moreover, mitigation measures will be implemented to minimize environmental degradation.

This EMP Report was prepared by the following environmental consultants:

<b>Name of representative of the EAP</b>	<b>Education qualifications</b>	<b>Professional affiliations</b>
Elina SP Vakuwile	B-tech Environmental Management	Environmental Scientist (EAPAN Member)

## 2. PROJECT DESCRIPTION

The proposed activity is for the establishment of tow townships of ±550 erven of government, business, housing and related land uses of Onyuulaye Proper and Extension 1 on Portions 1 and 2 of the Farm Onyuulaye Town and Townlands No 1120. The activity involves the constructions of bulk services and social and economic facilities such as Sewer Water Reticulation, Electricity supply, Roads, drinking water and the Constructions of Buildings as well as the maintenances of the site during operational phase such as Waste Disposal from the site to the recognized disposal site and the Noise Pollution control as well as technical maintenance of the afore-mentioned services. The proposed site is about 50m from the existing infrastructure which should make it more easily to be integrated into the bulk service infrastructure. With regard to services, running water will be supplied to each erf. It is expected that electricity will be supplied from the existing supply namely the Onyuulaye Substation located on the site. The water-borne sewage will be constructed and feed into the existing Onyuulaye reticulation system however; there is a need for additional sewer system and additional pump station. The sewer ponds will also be enlarged in the near future. The land is currently undeveloped but earmarked for residential township establishment.

## 3. SCOPE

The framework within which this Environmental Management Plan Report (EMP) is developed includes identifying various activities, their occurrence in the construction process and the likely impacts that are associated with those activities. It is therefore necessary to subcategorize the EMP report into Pre-Construction, Construction and Post-Construction activities.

The first category of the EMP report deals with the pre-construction activities identifies the impacts and mitigation measures that will need to be employed before the construction of the proposed project commences.

The second category deals with the construction activities and the mitigation measures that will need to be applied to reduce the severity of the impacts the proposed development may have on the surrounding environment.

The third category discusses the rehabilitation measures that will need to be implemented once the construction is completed, to ensure that the impact of the proposed rehabilitation on the environment is minimized. Furthermore, it will discuss activities that

need to be undertaken to ensure that no environmental degradation occurs as a result of the project.

The construction and operational of the proposed Township Establishment project will involve;

- The preparation of the site, including excavations no blasting required.
- Transportation of materials supply with road transport trucks.
- Off-loading of materials
- The constructions of the buildings and other substructures
- The constructions of the streets (Roads).
- The constructions of bulk services infrastructures such as water, electricity power lines and sewage.
- The supplying of bulk services such as water, electricity, waste disposal plan and waste management
- The Maintenance of the township by the Oshikoto Regional Council.
- All services infrastructure once constructed, the Regional Council will be responsible to maintain it.
- The Environmental Impact Assessment study report includes an impact assessment and their mitigation measures of all the three phases of the proposed project following:
  - The field investigations (site assessment) ,
  - Identifying and involving all stakeholders in the Environmental Impact Assessment process by expressing their views and concerns on the proposed project;
  - Identify all potential significant adverse environmental and social impacts of the project and recommend mitigation measures to be well described in the Environmental Monitoring Plan (EMP);
  - Coordination with the proponent, regarding the requirements of law of Namibia's Environmental Management Act (No. 7 of 2007) and other relevant policies and administrative framework.
  - To define the Terms of Reference for the Environmental Impact Assessment study.
  - A review of the policy, and relevant legislations
  - To provide overall assessment information of the social and biophysical environments of the affected areas by the proposed development.
  - This environmental management plan (EMP) aims to take a pro-active route by addressing potential problems before they occur. This should limit the corrective measures needed, although additional mitigating measures might be included if necessary.

#### 4. POLICY AND OTHER RELEVANT LEGISLATIONS

The following are the legal instruments that govern or advocate the Township Establishment:

SUBJECT	INSTRUMENTS AND CONTENT	APPLICATION TO THE PROJECT
The Constitution of the Republic of Namibia	General human rights – eliminates discrimination of any kind The right to a safe and healthy environment Affords protection to biodiversity	Ensure these principles are enshrined in the documentation of the exploration project
Environmental Management Act EMA (No 7 of 2007)	Requires that projects with significant environmental impact are subject to an environmental assessment process (Section 27). Details principles which are to guide all EAs.	
Environmental Impact Assessment (EIA) Regulations GN 28-30 (GG 487)	Details requirements for public consultation within a given environmental assessment process (GN 30 S21). Details the requirements for what should be included in a Scoping Report (GN 30 S8) and an Assessment Report (GN 30 S15).	
Forestry Act No 27 of 2004	Provision for the protection of various plant species	Some species that occur in the area are protected under the Forestry Act and a permit is therefore required to remove the species
Hazardous Substances Ordinance 14 of 1974:	Control of substances which may cause injury or ill-health or death of human beings because their toxic, corrosive, irritant, strongly sensitizing or flammable nature	The waste generated on site and at the campsite should be suitably categorised/classified and disposed of properly and in accordance with the measures outlined in the Ordinance and Bill
The Nature Conservation Ordinance ( No. 4 of 1975)	Prohibits disturbance or destruction of protected birds without a permit. Requires a permit for picking (the definition of “picking” includes damage or destroy) protected plants without a permit	Protected plants will have to be identified during the planning phase of the project. In case there is an intention to remove protected species, then permits will be required
Forestry Act 12 of 2001 Nature Conservation Ordinance 4 of 1975	Prohibits the removal of any vegetation within 100 m from a watercourse (Forestry Act S22(1)). Prohibits the removal of and transport of various protected plant species.	Even though the Directorate of Forestry has no jurisdiction within townlands, these provisions will be used as a guideline for conservation of vegetation.
Convention on Biological Diversity, 1992	Protection of biodiversity of Namibia	Conservation-worthy species not to be removed if not absolutely necessary.
Water Act 54 of 1956 Water Resources Management Act 24 of 2004	The Water Resources Management Act 24 is presently without regulations; therefore the Water Act 54 is still in force The Act provides for the management and protection of surface and groundwater resources in terms of utilisation and pollution	Obligation not to pollute surface water bodies
National Heritage Act 27 of 2004	Section 48(1) states that “A person may apply to the [National Heritage] Council [NHC] for a	Any heritage resources (e.g. human remains etc.) discovered during

	<i>permit to carry out works or activities in relation to a protected place or protected object</i>	<i>construction requires a permit from the National Heritage Council for relocation</i>
<b>Labour Act 11 of 2007</b>	<i>Details requirements regarding minimum wage and working conditions (S39-47).</i>	<i>Employment and work relations</i>
<b>Health and Safety Regulations GN 156/1997 (GG 1617)</b>	<i>Details various requirements regarding health and safety of labourers.</i>	<i>Protection of human health, avoid township establishment at areas that can impact on human health.</i>
<b>Public Health Act 36 of 1919</b>	<i>Section 119 states that “no person shall cause a nuisance or shall suffer to exist on any land or premises owned or occupied by him or of which he is in charge any nuisance or other condition liable to be injurious or dangerous to health.”</i>	<i>The Oshikoto Regional Council should ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instrument</i>
<b>Water Act 54 of 1956</b>	<i>The Water Resources Management Act 24 of 2004 is presently without regulations; therefore the Water Act No 54 of 1956 is still in force: Prohibits the pollution of underground and surface water bodies (S23(1)). Liability of clean-up costs after closure/ abandonment of an activity (S23(2)).</i>	<i>The protection of ground and surface water resources should be a priority. The main threats will most likely be concrete and hydrocarbon spills during construction and hydrocarbon spills during operation and maintenance.</i>
<b>Townships and Division of Land Ordinance 11 of 1963</b>	<i>Details the functions of the Townships Board including what they consider when receiving an application for Township Establishment (S3)</i>	<i>The proposed layout and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3.</i>

## 5. MANAGEMENT PRINCIPLES

These guideline principles will form the basis for environmental management on site. Should these principles require modification or additions during the project this should be done at the discretion of the responsible person, who will ensure that any modifications are communicated, explained to and discussed with all affected parties (i.e. the Oshikoto Regional Council, Road Authority, the Nghivela Planning Consultant, the contractors, service providers, and any affected party who requests this information).

The environmental operational procedures and environmental issues are identified and managed, under different phases of the project. The different phases are:

- Pre-construction (including design);
- Construction Phase;
- Operational Phase; and
- Decommissioning Phase



## **a) Environmental Issues to be managed**

### **ii) Pre-Construction Phase**

The Ministry of Environment and Tourism (MET) must be notified:

- Within 30 days, of change of ownership / developer.
- Of any change of address of the owner / developer.
- One month prior to commencement of construction activities.
- One month prior to commencement of operation.

The owner / developer must ensure to comply with the conditions described in the Record of Decision.

If required by the Record of Decision, advertise the authorisation for one day for two consecutive weeks in two local newspapers.

Records of all environmental incidents must be maintained, and a copy of these records be made available to the Ministry of Environment and Tourism (MET) on request throughout project execution.

### **ii) Construction and Operational Phases**

Unless otherwise indicated, the responsibilities of the construction contractor(s) and service providers will adhere to specified EMP actions for the construction phase. During the operational phase, Oshikoto Regional Council will ensure that the following actions are implemented by establishing accountability and responsibility between the different role players.

## **b) Consultation with Interested and Affected parties (IAPs)**

During these two phases the Construction and Operational Phases, it is of great value to establish an open communication channel between the developers (the Oshikoto Regional Council), the contractors and IAPs such that any queries, complaints or suggestions can be dealt with quickly and by the appropriate person(s).

## **6. ROLES AND RESPONSIBILITIES**

This section describes the roles and responsibilities of the key stakeholders involved in the development, implementation and review of the EMP.

### **Competent Authority**

The Department of Environmental Affairs: Ministry of Environment and Tourism is responsible for the review of the EMP documents it is the competent authority.

### **Oshikoto Regional Council**

The role of the applicant is as follows:

- Oshikoto Regional Council as it is the applicant, should hire suitably qualified person(s) and assign them with the responsibility to ensure implementation of the EMP, and should:
- Know the contents and implications of the EIA and monitor the implementation of EIA findings using the EMP.
- Revise the EMP as required and inform the relevant parties of the changes.
- The applicant should review report regarding the implementation of the EMP and make payments to the Contractor if the EMP is being implemented in a satisfactory manner.
- Give warnings and impose fines and penalties on the Contractor if the Contractor neglects to implement the EMP satisfactorily.
- Protect the environment and rehabilitate the environment as prescribed in the EIA.

### **Oshikoto Regional Council (Project Manager)**

The Applicant will appoint the Project Manager. The role of the project manager will be:

- Liaising directly with the relevant authorities with respect to the preparation and implementation of the EMP and meeting the conditions documented in the environmental clearance certificate.
- Bear the overall responsibility for managing the project contractors and ensuring that the environmental management requirements are met.

- Inform the contractors of the EMP and Environmental clearance certificate obligations.
- Approve all decisions regarding environmental procedures and protocols that must be followed.
- Have the authority to stop any construction in contravention with the EMP and RoD.
- In consultation with the Environmental Control Officer (ECO) has the authority to issue fines for transgressions of basic conduct rules and/or contravention of the EMP.
- Maintain open and direct lines of communication between the proponent, Contractor and Interested and Affected Parties (I&APs) with regards to environmental matters.
- Attend regular site meetings and inspections where required.

### **Oshikoto Regional Council (Environmental Control Officer)**

An Environmental Control Officer (ECO) should be employed by the Contractor. This person should be available for the duration of the construction period and should have appropriate training and experience in the implementation of the EMP and overseeing construction process. This ECO will implement EMP at all levels and sections (sub-contractors) during the construction of the townships. The responsibilities of the ECO include the following:

- Assist the Project Manager and Contractor in finding environmentally responsible solutions to challenges that may arise.
- Conduct environmental monitoring as per EMP requirements.
- Monitor performance of the contractors and ensure compliance with the EMP and associated method statements.
- Maintenance, update and review of the EMP.
- Liaison between the contractors, authorities and other key stakeholders on all environmental concerns.
- Validating regular site inspection reports which are prepared by the Contractor's Environmental Officer (EO).
- Checking the EO's record of environmental incidents as well as corrective and preventative actions taken.
- Checking the EO's public complaints register in which all complaints are registered and actions taken thereof.
- Issuing site instructions to the contractors ECO for corrective actions required.
- Assisting with the resolution of conflict.

- Communicate all amendments of the EMP to the relevant stakeholders.
- Conduct monthly audits to ensure that the system for implementing the EMP is effective.

### **Contractor's Safety Officer**

Implement the recommendations in the EIA and satisfy the conditions in the RoD.

- Ensure that safety is practiced for all activities on site.
- Prepare and implement safety procedures
- Communicate all safety related issues.

### **Contractors**

The contractor should appoint the Contractor's representative who is suitably qualified to implement the EMP. The responsibilities of the Contractor include:

- Compliance with the relevant legislation and the EMP.
- Preparation and submission to the proponent through Project Manager the following Management Plans prior to commencing work:
  - Environmental Awareness Training and Inductions;
  - Emergency Preparedness and Response;
  - Waste Management; and
  - Health and Safety.
- Environmental awareness presentations (inductions) to be given to all site personnel prior to work commencement; the ECO is to provide the course content and the following topics, at least but not limited to, should be covered:
  - The importance of complying with the relevant Namibian, International and Best Practice Legislation.
  - Roles and Responsibilities, including emergency preparedness.
  - Basic Rules of Conduct (Do's and Don'ts).
  - EMP: aspects, impacts and mitigation;
  - Fines for Failure to Adhere to the EMP;
  - Health and Safety Requirements.
- Record keeping of all environmental awareness training and induction presentations; and
- Attend regular site meetings and environmental inspections.

### **Resident Engineer (RE)**

The Resident Engineer (RE) will be appointed by the 'Consultant' and will be required to oversee the construction program and construction activities performed by the Contractor. The RE is expected to liaise with the Contractor and ECO on environmental matters, as well as any relevant engineering matters where these may have environmental consequences.

## **7. PHASES OF THE PROJECT**

### **The Construction Phase**

The bulk of the impacts during this phase will have immediate effects (e.g. noise, dust and water pollution). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts can then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the developer.

Impacts	Description	Mitigation	Monitoring	Responsible Body
<p><b>Dust</b>  <i>Main causes of air pollution are dust from vehicle movements and stockpiles, vehicle emissions and fires.</i></p>	<p>Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur.</p> <p>These are expected to be site specific, short-termed and will most probably pose a negligible nuisance and health threat to those residing nearby. The construction of the proposed facility will have impact on the surrounding air quality as construction vehicle will be frequenting the site and surrounding. The clearing of vegetation in preparation for construction exposes the soil to dust which increases the Particulate Matter concentration in the atmosphere. PM is contributing to respiratory tract infections, especially in rural areas much like the proposed site.</p>	<p>Vehicles travelling to and from the construction site must adhere to the speed limits so as to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas.</p> <p>It is recommended that regular dust suppression be included in the construction phase, when dust becomes an issue.</p> <p>Loads could be covered to avoid loss of material in transport, especially if material is transported off site.</p>	<p>Regular visual inspection by ECO</p>	<p>Oshikoto Regional Council / Appointed Contractor/ECO</p>
<p><b>Employment Creation</b>  <i>(Positive Impact) this is a job creation and economic benefit to local community since the construction activities associates with the installation of services</i></p>	<p>Temporary employment opportunities are anticipated to be created during construction, both directly (construction workers) and indirectly (suppliers, service providers, informal traders alongside site).</p>	<p>The contractor must appoint an Environmental Liaison Officer to monitor the situation with a direct hands-on approach.</p> <p>The contractor must make use of local labour where possible in order to stimulate the local economy.</p>	<p>Monitored once off by the ELO</p>	<p>Appointed Contractor/ ELO or Oshikoto Regional Council</p>

<p><i>infrastructure which will require labourers from the surrounding.</i></p>		<p>labour or services (e.g. security guards) should be sourced from the local area (within 50km from the site).</p> <p>When recruiting, the responsible contractor should ensure gender equality is taken into consideration that both men and women are employed equally and treated equally.</p> <p>Equity, transparency, should be put into account when hiring and recruiting and that Public Participation i.e. Community Leaders or Community committees should also take part in the recruiting process for decision makings.</p> <p>No employment applications may take place at the entrance to the site, formal employment channels must be used.</p>		
<p><b>Noise</b></p>	<p>Noise levels are expected to rise during the construction phase of the development. Construction activities that cause noise include vehicle trafficking, generator noise, pressure hammers and construction worker's voices, including earthmoving equipment which will be utilized during the construction phase. However, no village properties nearby (&lt;150m) the site were identified. The project site is currently not adjacent to any residential and industrial area except few illegal bars occupying the proposed site therefore the construction of the development will disturb</p>	<p>Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays.</p> <p>No construction activities may be undertaken on Sunday.</p> <p>Provide ear plugs and ear muffs to staff undertaking the noisy activity or working within close proximity thereof.</p> <p>Fit silencers to construction equipment and vehicles.</p>	<p>Strict operational times. Regular inspection. By E and ECO</p>	<p>Oshikoto Regional Council / Appointed Contractor/ ECO</p>

	residents at a limited extent. Therefore, these noise levels that are likely to occur during this phase are not assessed to be a nuisance to the residents and communities.			
<b>Soil Loss and Erosion</b>	Loss of topsoil during the construction period caused by the clearing and removal of vegetation, the digging of structure foundations, and earthworks may expose soils to wind and rain and could result in localized erosion.	<p>Removal of vegetation to take place only within demarcated construction site.</p> <p>No work is to be conducted within 30 meters of all drainage lines</p> <p>Topsoil should only be exposed for minimal periods of time and adequately stockpiled to prevent the topsoil loss and run-off.</p> <p>Planting more indigenous trees on park even and on some areas of open space should be done.</p> <p>Reuse topsoil to rehabilitate disturbed areas.</p>	Regular visual inspection by ECO, Engineer, or the Appointed Contractor,	Appointed Contractor, Engineer, Oshikoto Regional Council and ECO
<b>Removal and use of local flora for firewood</b>	The collection of local flora for firewood may lead to the removal of the protected flora due to the lack of knowledge of the types of protected flora.	<p>No cutting down of trees for firewood.</p> <p>Utilise commercially sold wood or other sources of energy.</p> <p>Training of contractors on environmental awareness and the importance of flora.</p>	Regular visual inspection by ECO, the Appointed Contractor, PM	Appointed Contractor, Oshikoto Regional Council and ECO
<b>Health and Safety</b>	Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. is very important and should	All contractors, consultants and labourers must ensure that the necessary personal protective equipment (PPE) is worn on site.	Regular visual inspection by Safety Officer	Oshikoto Regional Council / Appointed Contractor/ ECO/ EO



	<p>be adhered to. During construction phase, there is a possibility of injuries to occur if no measures are taken into consideration.</p>	<p>Official training in the correct fit, use, care, storage and limitations of all Personal Protective Clothing, Respiratory and Hearing Equipment must be given to the employees.</p> <p>Ensure all open excavations are clearly marked and all the appropriate health and safety signage are displayed on site.</p> <p>The Contractor shall provide a standard first aid kit at the site office and at the camp.</p> <p>- Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction.</p> <p>The contractor is further advised to ensure that adequate emergency facilities are available on site.</p> <p>The construction staff handling chemicals or hazardous materials must be trained in the use of the substances and the environmental, health and safety consequences of incidents.</p> <p>All construction staff must have the appropriate PPE.</p>		
<p><b>Generation of waste</b></p>	<p>This can be in a form of contaminated soil and building rubble.</p>	<p>Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land.</p>	<p>Bins and / or skips should be emptied regularly and waste should be disposed of at a registered disposal site. Engineer / ECO.</p>	<p>Oshikoto Regional Council / Appointed Contractor</p>

	<p>Excavated soil from the installation of the bulk infrastructure.</p> <p>Littering</p>	<p>Bins/skips shall not be used for any purpose other than waste collection and shall be emptied on a regular basis.</p> <p>The Contractor shall ensure that all litter is collected from the work and camp areas daily.</p> <p>Soil from excavation activities must be reused as fill elsewhere on the site</p> <p>Ensure all hazardous materials are transported to a hazardous waste site for disposal by a licensed removal contractor.</p>		
<b>Traffic</b>	Congestion in traffic	<p>Flag men and traffic controllers should be appointed to regulate traffic flow of vehicle construction.</p> <p>The vehicle construction should limit speed to 40km/h and also be considerate of the surrounding land users.</p> <p>The responsible contractor must ensure that all drivers employed have valid driver's licenses of vehicle types they employed for, and that they have experience in driving those vehicles.</p>	Strict operational times. Regular inspection. By and ECO	Oshikoto Regional Council / Appointed Contractor
<b>Groundwater contamination</b>	Minimal groundwater contamination can be caused by leakages of fuel from machinery and heavy-duty vehicles during construction/decommissioning phase. Care must be taken to avoid contamination of soil.	<p>Proper toilet facilities should be installed at the construction site and at the camping site or alternative arrangements.</p> <p>Drain tanks and pipelines prior to removal. Prevent spillages of any chemical.</p>	Strict operational times. Regular inspection. By E and ECO	Oshikoto Regional Council / Appointed Contractor/ ECO

	<p>Leakage might occur during removal of tanks, dispensing points and associated reticulation pipelines in the decommissioning phase.</p> <p>Stormwater</p>	<p>Drainage must be controlled to ensure that runoff from the site will not culminate in off-site pollution or result in damage to properties downstream of any stormwater discharge, with particular emphasis on the informal settlement located down gradient of the proposed development.</p> <p>The stormwater drainage network system must be kept separate from the waste water (water containing waste) system.</p> <p>Fuel (diesel and petrol) and oil containers shall be in good condition and placed in a bunded area or on plastic sheeting covered with sand (temporary bunding).</p>		
<b>Safety and Security</b>	<p>During the construction and decommissioning phase, earthmoving equipment will be used on site. This increases the possibility of injuries. Presence of equipment may encourage criminal activities (theft).</p>	<p>The responsible contractor must ensure that all staff members are briefed about the potential risks of injuries on site.</p> <p>The contractor is further advised to ensure that adequate emergency facilities, including first aid kits, are available on site.</p> <p>Ensure that the contact details of the police or security company and ambulance services are available on site.</p> <p>The site must be fenced off to prevent unauthorised access during construction.</p> <p>All visitors must report to the site office.</p>	<p>Security System Monitoring. Safety Procedures. First Aid Training by ECO.</p>	<p>Oshikoto Regional Council / Appointed Contractor/Safety Officer/ ECO/</p>

<p><b>Increased Spread of HIV/AIDS</b></p>	<p>migrant workers with HIV/AIDS may affect local people leading to a high rate of HIV/AIDS in Onyuulaye Settlement.</p>	<p>The spending power of locals and expatriates working for the developer and/or its contractors are likely to increase, and this might be a perfect opportunity for sex workers to explore. Migrant labourers from other regions and expatriates are normally vulnerable and may use the services rendered by the sex workers. A key initiative should be to educate workers. See section 9 (Socio-economic Environment) for details on region statistics.</p> <p>External construction workers should be housed in secure camp and are to abide by rules of the EMP to prevent public disruption (ie. Spread of HIV/AIDS, crime, public disturbance).</p> <p>Contractors should be encouraged to source labour from surrounding areas to prevent the spread of HIV/AIDSs from external workers who will be sourced from other areas out of Onyuulaye because sourcing labour from the surrounding will prevent the spread of the HIV/AIDS as the residents will not be vulnerable to new workers in the area.</p> <p>Condoms as a contraceptive should be distributed to construction employees.</p>	<p>Strict operational times. Regular inspection. By E and Project manager/ Officer</p>	<p>Oshikoto Regional Council / Appointed Project Manager/ Safety Officer</p>
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## The Operational Phase

By taking pro-active measures during the planning and construction phases, potential environmental impacts emanating during the operational phase will be minimised. This, in turn, will minimise the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

Impacts	Description	Mitigation	Monitoring	Responsible Body
<b>Storm water</b>	Storm water usually runs off the areas and flow into the water bodies without any kind of treatment. This can pollute the water bodies like creeks, lakes and rivers and have adverse effects on their chemical as well as biological nature. It is in this nature that plans for storm water collection has been proposed in such way so as to accommodate the entire amount of outflow that may occur after development.	Storm water drains will be collected through network of storm drains from gardens, parking areas, paved and unpaved areas, and roadways.  All along the roads storm water drains would be provided to collect water during rains.  They would be adequately sized to prevent over flooding of the site.	Strict operational times. Regular inspection. By Engineer (Technical team) and ECO	Oshikoto Regional Council
<b>Commercialization of the area</b>	The project will be a social and financial upliftment for the community.	Residents to be provided with all the basic amenities and utilities required by the community for them to live in a quality life style. Jobs emanating from the construction and operation of the proposed development will be outsourced to small medium enterprises in the area.	Regular inspection By Engineer and ECO	Oshikoto Regional Council
<b>Improved aesthetic look of the area</b>	The development of this project at this site is essential to improve the aesthetics of the area while turning it into an environmentally	Create awareness among the residents about energy conservation and other resources as well as to implement measures to prevent or minimize any adverse effects on the environment.	Regular visual inspection by EO	Oshikoto Regional Council

	friendly settlement with improved infrastructure services	<p>Public open space and park erven should be revegetated to look greener and to minimize soil exposure to erosion.</p> <p>Ensure proper and regular maintenance of the area.</p> <p>No illegal dumping of waste should be allowed</p>		
<b>Increased employment opportunities</b>		<p>The principles of gender equality, maximising local employment should be implemented in the provision and establishment of jobs.</p> <p>It is recommended to put local people at forefront when hiring or recruiting people, therefore unskilled people from the local community should be employed and semi-skilled from the region so that unskilled workers can be trained by semi-skilled for them to learn and be able to compete with others in future.</p> <p>Jobs for the maintenance of infrastructure and services will be created following the completion of the development. These jobs might be made available to existing labour there creating long term employment.</p> <p>Equity, transparency, should be put into account when hiring and recruiting and that Public Participation i.e. Community Leaders or Community committees should also take part in the recruiting process for decision makings.</p>	Monitored once off by the ELO	Appointed Contractor/ ELO or Oshikoto Regional Council

<b>Traffic</b>	Potential impact due to increase in traffic because the site is dissected by the D3630 and 3631 from Onyati and Okankolo and many vehicles will travel on that road.	<p>Sidewalks for pedestrians should be provided.</p> <p>Appropriate road signs and markings should be provided throughout the layout.</p> <p>Signs should be provided at intersections particularly at higher order intersections.</p>	Regular inspection By Engineer and EO	Oshikoto Regional Council
<b>Waste management</b>		<p>During the operations phase, the Oshikoto Regional Council waste management will service the proposed residential area.</p> <p>Oshikoto Regional Council to develop a formal waste collection strategy and that the waste is to be collected regularly by disposed of at authorized dumping site or disposal site.</p> <p>Illegal dumping should be prohibited.</p>	Regular inspection By EO	Oshikoto Regional Council
<b>Land use</b>	The proposed development will result in a change in land use, with some loss of grazing taking place. However, it will impact positively on the current housing shortage within the Rucana area because it will aim to address the number of informal settlements as well as providing houses to previously disadvantaged individuals who cannot afford houses. It is expected that 300 new units will be built on the proposed site, providing as many families with housing.	<p>Land use will be changed from agricultural to residential use. However, the development will be compatible with the surrounding land use on completion of the construction phase.</p> <p>Houses should be sold to local previously disadvantaged individuals who cannot afford houses or locals with low incomes.</p> <p>No informal settlements should occupy the land</p>	Monitored by the Project Manager	Oshikoto Regional Council





## 8. ENVIRONMENTAL MONITORING PLAN

Environmental monitoring plan is part of the EMP performance assessment and will need to be compiled and submitted as determined by the Environmental Commissioner. The process of monitoring performances against the objectives and documenting all environmental activities is part of internal and external auditing. This will be coordinated by the Environmental Control Officer (ECO) / External Consultant / Suitable qualified in-house resource person. Tables 3 outline the type of information that shall need to be recorded on a regular basis by the Environmental Control Officer (ECO) as part of the monitoring process of the activities and the effects.

Mitigation	Compliance	Follow-up action required	By whom	By When	Completed
Is there an Environmental awareness training programme?					
How many people have been given environmental awareness training?					
Is a copy of the EMP on site?					
How effective is the awareness training?					
Do people understand the contents of the EMP?					
If not, where are the weaknesses?					
Ask 3 people at random various questions about the EMP.					