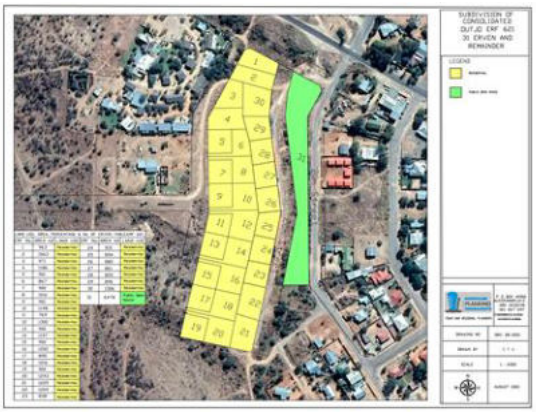
ENVIRONMENTAL MANAGEMENT PLAN

FOR THE

SUBDIVISION OF ERF 34, OUTJO INTO ±67 ERVEN AND REMAINDER AND THE SUBDIVISION OF CONSOLIDATED ERF 621, OUTJO INTO ±32 ERVEN AND REMAINDER AND THE CREATION OF STREETS.



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LIST OF ABBREVIATIONS

TERMS	DEFINITION
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
DEA	Department of Environmental Affairs
PPPPs	Projects, Plans, Programmes and Policies
NDC	Namibia Development Consultants
SANS	South African National Standards
I&APs	Interested and Affected Parties
PM	Particulate Matter
NPC	Nghivelwa Planning Consultants
GRN	Government of the Republic of Namibia
OM	Outjo Municipality

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1. INTRODUCTION AND BACKGROUND

The Outjo Municipality has resolved to subdivide Erven 34 and 621, Outjo in order to formalize the existing residential properties and to create new erven to be allocated and sold to the inhabitants of the town. Erf 34 and 621, Outjo currently measure 8, 1748 hectares and 1, 6381 hectares in extent respectively. The erven are both zoned "Undetermined". The subdivision of Erf 34 Outjo into ±67 erven and Erf 621, Outjo into ±32 erven will result in the creation of streets that will be used for access to the new erven to be created. The subdivision of land and the creation of streets is a listed activity and thus, requires an Environmental Clearance Certificate.

There, the Outjo Municipality has appointed Nghivelwa Planning Consultants to conduct an Environmental Impact Assessment and Environmental Management Plan (EMP) for the Subdivision of Erf 34, Outjo into ±67 Erven and Remainder (Street) and the Subdivision of Consolidated Erf 621, Outjo into ±32 Erven and Remainder (Street) and the creation of streets. The statutory exercise is necessary to allow for the formalization of residential properties already constructed and the creation of new residential erven to be allocated to Outjo residents. The Environmental Impact Assessment has been conducted to meet the requirements of Namibia's Environmental Management Act, 2007 (Act No. 7 of 2007).

Erven 34 and 621, Outjo are currently owned by Outjo Municipality and currently measure 8, 1748 hectares and 1, 6381 hectares in extent respectively. The properties are located in Outjo Proper, Outjo Town, Outjo Constituency of Kunene Region as shown in Figure 1 and 2 below. The site is currently developed with existing residential properties. The coordinates for the sites are Erf 34: 20° 6.661'S, 16° 9.491'E, Erf 621: 20° 6.401'S, 16° 8.679'E. The locality plans for the erven are shown below.

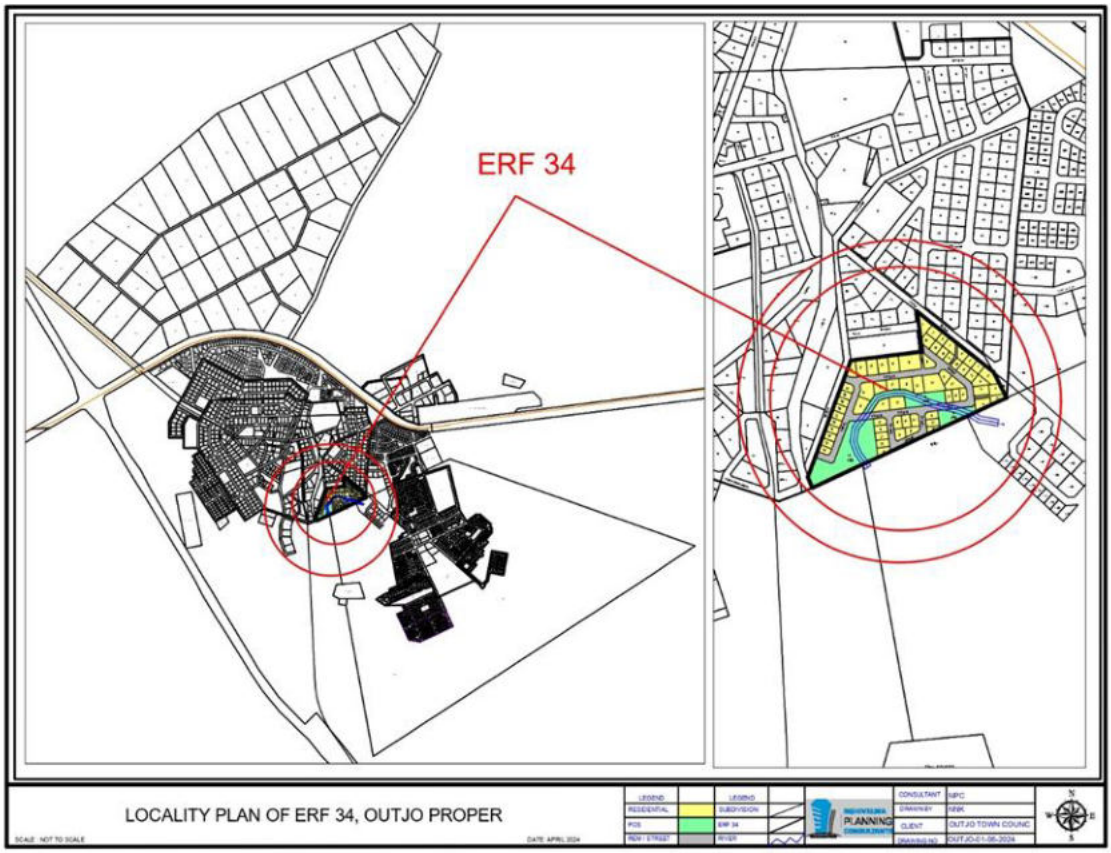

Figure 1: Locality Plan of Erf 34, Outjo

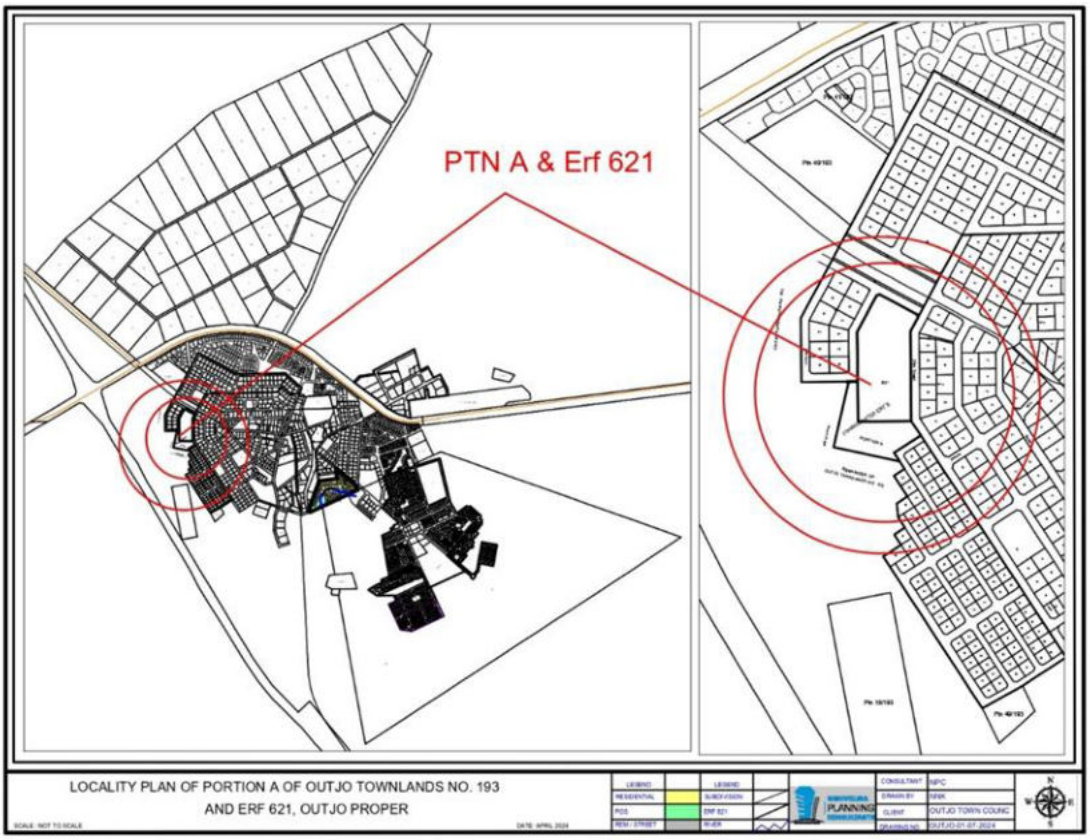

Figure 2: Locality plan of Erf 621, Outjo

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.

2. PROJECT DESCRIPTION

The project entails the Subdivision of Erf 34, Outjo into ±67 Erven and Remainder (Street), Subdivision of the Consolidated Erf 621, Outjo into ±32 Erven and Remainder and the creation of streets, the properties are located in Outjo Town, Kunene Region in the north central part of Namibia. The purpose of the exercise is to formalize the residential properties already constructed on Erven 34 and 621, Outjo and to create new erven to be allocated to the Outjo residents.

It also includes the maintenance of the site during the operational phase such as waste disposal, noise pollution as well as maintenance of the afore-mentioned municipal services. Erven 34 and 621, Outjo are already connected to the municipal services of Outjo town, however additional municipal services will have to be constructed in the new streets to be created. The erven will obtain access from adjacent existing streets and from the new street that are to be constructed after the EIA and town planning processes are approved.

All new erven to be created will be connected to the existing bulk services that will be extended to accommodate the new erven and the water-borne sewage will be connected to the sewerage reticulation system of Outjo, the harmful residue that is created will be transported to the waste disposal site as to be provided by the Outjo Municipality. The land is currently partially developed and there bushes that is found on the property. Thus, the proposed residential development is consistent with future plans of Outjo.

3. SCOPE

The framework within which this Environmental Management Plan (EMP) is developed includes identifying various activities, their occurrence in the formalization 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 that deals with the pre-construction activities identifies the impacts and mitigation measures that will need to be employed before the construction of the proposed municipal services commences.

The second category of the EMP report that deals with the activities that should take place during the construction of the municipal services and the mitigation measures that will need to be implemented to reduce the severity of the impacts the proposed development may have on the surrounding environment.

The third category of the EMP addresses 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 environmental degradation does not occur as a result of the project.

The construction and operation of the proposed municipal services will involve;

- Preparation of the site, including excavations, no blasting is required.
- Transportation of materials to the site.
- Off-loading of materials on site.
- Construction of roads, storm water drains, electrical poles and installation of sewer pipes.
- Supply of bulk services such as water, electricity, waste disposal and waste management
- Maintenance of bulk services by Outjo Municipality.

The following actions culminated in the Environmental Impact Assessment study report that includes an impact assessment and their mitigation measures of the three phases of the proposed project:

- 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.
- Consultation of the Terms of Reference for the Environmental Impact Assessment study.
- A review of the policy, and relevant legislations
- Provision of overall assessment information of the social and biophysical environments of the affected areas by the proposed development.

The 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 legislation is used to guide the subdivision of land and the creation of streets in Namibia.

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 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.	Ensure that the subdivision and creation of streets is carried out within the parameters of the Act.
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).	Ensure that the subdivision and creation of streets aligns with the EIA regulations.

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.
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 Resources Management Act 11 of 2013	The Act provides for the management, protection, development, use and conservation of water Resources; to provide for the regulation and monitoring of water services.	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 permit to carry out works or activities in relation to a protected place or protected object	Any heritage resources (e.g. human remains etc.) discovered during construction requires a permit from the National Heritage Council for relocation
Labour Act 11 of 2007	Details requirements regarding minimum wage and working conditions (S39-47).	Employment and work relations during the construction phase of the project.
Health and Safety Regulations GN 156/1997 (GG 1617	Details various requirements regarding health and safety of labourers.	Protection of human health, avoid development at areas that can negatively impact on human health.

Public Health Act 36 of 1919	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."	Ensure that all contractors involved during the construction, operation and maintenance of the proposed project comply with the provisions of these legal instrument
Water Resources Management Act 11 of 2013	Prohibits the pollution of underground and surface water bodies (S23 (1)). Liability of clean-up costs after closure/ abandonment of an activity (S23 (2)).	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.
Urban and Regional Planning Act no 5 of 2018	Details the functions of the Urban and Regional Planning Board including their consideration when assessing an application for the subdivision of land and the creation of streets (S3).	The proposed subdivision plan and land uses should be informed by environmental factors such as water supply, soil etc. as laid out in Section 3 of the act.
Local Authorities Act no 23 of 1992	Details the procedures to be followed for the provision of municipal services in Local Authority Areas.	The local authority has an obligation to provide for municipal services to all its inhabitants.

Table 1: Relevant legislation

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 Outjo Municipality, Nghivelwa 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, the Outjo Municipality 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 Outjo Municipality, 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, Forestry and Tourism is responsible for the review of the EMP documents it is the competent authority.

Outjo Municipality (Applicant)

The role of the applicant is as follows:

- Outjo Municipality as 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 reports regarding the implementation of the EMP and make payments to the Contractor if the EMP is being implemented in a satisfactory manner.
- Give warning 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.

Outjo Municipality (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.

Outjo Municipality (Environmental Control Officer)

An Environmental Control Officer (ECO) should be employed by the Contractor. The (ECO) 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. The ECO will implement EMP at all levels and sections (sub-contractors) during the construction of the municipal services. 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 Contactor'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
Dust *The main cause of air pollution is dust from vehicles and stockpiles of sand and stones, vehicle emissions and fires.*	Dust may be generated during the construction/decommissioning phase and might be aggravated when strong winds occur. These are expected to be site specific, short-termed and will pose a negligible nuisance and health threat to those residing nearby. The construction of municipal services will have an impact on the surrounding air quality as construction vehicles will be on site frequently. The digging of trenches the construction of foundations exposes the soil to dust which increases the Particle Matter concentration in the atmosphere. PM is contributing to respiratory tract infections, especially in rural areas much like the proposed site.	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/h should be set for all vehicles travelling over exposed areas. It is recommended that regular dust suppression be included in the construction phase, when dust becomes an issue. Loads of sand and stones and other construction materials should be covered to avoid loss of materials during the transportation process, especially if material is transported off site.	Regular visual inspection by ECO	Outjo Municipality / Appointed Contractor/ECO

Employment Creation *(Positive Impact) job creation and economic benefit to the local community as the construction activities will require labour from the locals.*	Temporary employment opportunities are anticipated to be created during construction, both directly (construction workers) and indirectly (suppliers, service providers, informal traders Alongside site).	The contractor must appoint an Environmental Liaison Officer to monitor the situation with a direct hands-on approach. The contractor must make use of local labour where possible in order to stimulate the local economy. Labour or services (e.g. security guards) should be sourced from the local area (within 10km from the site). When recruiting, the responsible contractor should ensure gender equality is taken into consideration that both men and women are employed equally. Equity, transparency, should be taken into account when hiring and recruiting and that the public is included in the recruitment process. No employment applications may take place on site, formal employment channels must be used.	Monitored once off by the ELO	Appointed Contractor/ ELO or Outjo Municipality

Noise Pollution	Noise levels are expected to rise during the construction phase of the development. Construction activities that can cause noise include vehicles/trucks, electricity generators, pressure hammers and construction worker's voices and earthmoving equipment which will be utilized during the construction phase. However, the construction will only take place during working hours. Therefore, the construction will cause limited disturbance to the locals. The noise levels that are likely to occur during this phase are not assessed to be a nuisance to the residents and community.	Construction should be limited to normal working days and office hours from 08h00 to 17h00 and 7:30 – 13:00 on Saturdays. No construction activities may be undertaken on Sundays. Provide hearing protection equipment to the workers that are working in close proximity to loud machinery and those that are operating them. Schedule work in a way that limits the workers exposure to construction noise. Add noise barriers where necessary to shield the surrounding community from the noise generated in the construction site. Fit silencers to construction equipment and vehicles.	Strict operational times. Regular inspection. By ECO	Outjo Municipality / Appointed Contractor/ ECO
Soil Loss and Erosion	Loss of topsoil during the construction period caused by the digging of foundations, and earthworks may expose	No work is to be conducted within 30 meters of all drainage lines	Regular visual inspection by ECO, Engineer, or	Appointed Contractor, Engineer, Outjo

	soils to wind and rain and could result in localized erosion.	Topsoil should only be exposed for minimal periods of time and adequately stockpiled to prevent the loss of topsoil and run-off. Planting more indigenous trees on the street and on some areas of open spaces should be done. Reuse topsoil to rehabilitate disturbed areas.	the Appointed Contractor,	Municipality and ECO
Removal and use of local flora for firewood	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. However, the site is already developed and there is no vegetation located on site.	No cutting down of trees for firewood. Utilize commercially sold wood or other sources of energy. Training of contractors on environmental awareness and the importance of flora.	Regular visual inspection by ECO, the Appointed Contractor, PM	Appointed Contractor, Outjo Municipality and ECO
Health and Safety	Health and Safety Regulations pertaining to personal protective clothing, first aid kits being available on site, warning signs, etc. should be adhered to. During construction phase, there is a	All contractors, consultants and labourers must ensure that the necessary personal protective equipment (PPE) is worn on site. Official training in the correct fit, use, care, storage and limitations of	Regular visual inspection by Safety Officer	Outjo Municipality / Appointed Contractor/ ECO/ EO

	possibility of injuries to occur if no measures are taken.	all Personal Protective Clothing, Respiratory and Hearing Equipment must be given to the employees. Ensure all open excavations are clearly marked and all the appropriate health and safety signage are displayed on site. The Contractor shall provide a standard first aid kit at the site office and at the camp. Ensure the appointment of a Safety Officer to continuously monitor the safety conditions during construction. The contractor should further ensure that adequate emergency facilities are available on site. 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.		

		All construction staff must have the appropriate PPE.		
Generation of waste	This can be in a form of contaminated soil and building rubble. Excavated soil from the construction of the street, sewerage pipes and other municipal services. Littering by the construction workers.	Ensure that no excavated soil, refuse or building rubble generated on site are placed or dumped on surrounding properties or land. Bins/skips shall not be used for any purpose other than waste collection and shall be emptied on a regular basis. The Contractor shall ensure that all litter is collected from the work and camp site areas on a daily basis. Soil from excavation activities must be reused to fill elsewhere on the site Ensure all hazardous materials are transported to a hazardous waste site for disposal by a licensed removal contractor.	Bins and / or skips should be emptied regularly and waste should be disposed of at a registered disposal site. Engineer / ECO.	Outjo Municipality / Appointed Contractor

Traffic	The proposed construction of a street and other municipal services is expected to cause traffic congestion in the streets adjacent to the sites as construction vehicles will be moving up and down to ferry building material in and out of the construction site.	Flag men and traffic controllers should be appointed to regulate traffic flow of vehicles in and around the construction sites. The construction vehicles speed limit should be 40km/h and should be considerate of the neighbors. The responsible contractor must ensure that all drivers are in possession of a valid driver's licenses for the vehicle types they intended to operate and have adequate experience operating those vehicles.	Strict operational times. Regular inspection. By and ECO	Outjo Municipality / Appointed Contractor
Groundwater contamination	Minimal groundwater contamination can be caused by leakages of fuel from machinery and construction vehicles during construction/decommissioning phase. Care must be taken to avoid contamination of soil. Leakage might occur during removal of tanks, dispensing points and associated	Proper ablution facilities should be installed at the construction sites and at the camping site or alternative arrangements should be made. Drain tanks and pipelines prior to removal. Prevent spillages of any chemical. Drainage must be controlled to ensure that runoff from the site will not culminate in off-site pollution or	Strict operational times. Regular inspection. By E and ECO	Outjo Municipality / Appointed Contractor/ ECO

	reticulation pipelines in the decommissioning phase.	result in damage to properties downstream of any storm water discharge, with particular emphasis on the water stream located down gradient of the proposed development. The storm water drainage network system must be kept separate from the waste water (water containing waste) system. 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).		
Surface water contamination (local water ponds)	Leakages from equipment, accidents from fuel tankers may occur during the construction phase and the waste can end up the local water ponds during the rainy season.	The construction vehicles are not allowed to be parked within 20-meters of the banks of the water ponds after working hours. The construction site camp should be constructed more than 20-meter from the banks of the water ponds. No dumping of solid or liquid waste in standing water.	Regular inspection. By E and ECO	Outjo Municipality / Appointed Contractor/ ECO

		No blockage of any kind that will prevent the storm water from draining naturally is allowed.		
Safety and Security	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) etc.	The responsible contractor must ensure that all staff members are aware of the potential risks of injuries on site. The contractor must further ensure that adequate emergency facilities, including first aid kits, are available on site. Ensure that the contact details of the police or security company and ambulance services are available on and clearly displayed for all workers on site to see. The site must be fenced off to prevent unauthorized access during construction and where possible, additional barriers should be used to prevent outsiders from visualizing the machinery on site. All visitors must report to the site office.	Security System Monitoring. Safety Procedures. First Aid Training by ECO.	Outjo Municipality / Appointed Contractor/Safety Officer/ ECO/

Increased Spread of communicable diseases	Migrant workers with HIV/AIDS, Covid – 19 and other communicable diseases may affect local people leading to a high rate of HIV/AIDS, Covid – 19 and other diseases in Outjo.	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. External construction workers should be housed in secure camp and are to abide by rules of the EMP to prevent public disruption (i.e. Spread of HIV/AIDS, crime, public disturbance). Contractors should be encouraged to source labour from surrounding areas to prevent the spread of HIV/AIDs from external workers who will be sourced from other areas out of Outjo because sourcing labour from the surrounding area will prevents the spread of the HIV/AID as the residents will not be	Strict operational times. Regular inspection. By E and Project manager/ Safety Officer	Outjo Municipality / Appointed Project Manager/ Safety Officer

		vulnerable to new workers in the area. All government protocols on Covid-19 should be followed at all times. Condoms as a contraceptive should be distributed to construction employees. General healthy living conditions should be enforced on site.		

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
Storm water	Storm water usually runs off the area and flow into the water bodies without the need for treatment. This can pollute the water bodies like creeks, lakes and rivers and have adverse effects on their chemical as well as biological nature. Existing storm water drainage and collection must accommodate the storm water during the rainy season.	Existing storm water drains along the adjacent streets should channel the storm water to natural water courses while excess storm water is to be collected for consumption and recreational use. Storm water will be collected through network of storm drains from gardens, parking areas, paved and unpaved areas, and roadways. The storm water drainage system should have the capacity to prevent flooding of the site and surrounding areas.	Strict operational times. Regular inspection. By Engineer (Technical team) and ECO	Outjo Municipality
Improved aesthetic look of the area	The formalization of residential properties on the proposed sites is essential to improve the aesthetics of the area while turning it into an environmentally friendly	The formalization of residential properties and construction of municipal services will improve the aesthetics of the area and make it attractive for Outjo residents and transit visitors.	Regular visual inspection by EO	Outjo Municipality

	township with improved infrastructure services.	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. Public open space and recreational erven should be vegetated to look greener and to minimize soil exposure to erosion. Ensure proper and regular maintenance of the area. No illegal dumping of waste should be allowed		
Increased employment opportunities	The construction of services and formalization of residential properties has the potential to create employment opportunities for the local population. Temporary jobs for the construction of municipal services and residential buildings and permanent	The principles of gender equality should be upheld and maximizing local employment should be prioritized in the provision of employment for this project. It is recommended to prioritize local people during the recruitment process.	Monitored once off by the ELO	Appointed Contractor/ ELO or Outjo Municipality

	opportunities to be created through maintenance of services that will follow.	Jobs for maintenance of infrastructure and services will be created at the completion of the project. These employment opportunities will help secure long term employment opportunities for the already employed maintenance staff of Outjo Municipality. Jobs for security personnel to patrol the development, the open market and businesses to be formalized and the surrounding areas will also be created. Equity and transparency, should be considered when hiring and recruiting and that Public Participation i.e. Community Leaders or Community committees should also take part in the recruiting process.		
Traffic	Potential impact due to increase in traffic because the formalization of residential properties and the creation of streets will see an increase in the population of the inhabitants of the immediate area.	Sidewalks for pedestrians should be provided along the residential properties. Appropriate road signs and markings should be provided along the adjacent street.	Regular inspection By Engineer and EO	Outjo Municipality

		Signs should be provided at intersections particularly at higher order intersections. Appropriate parking for vehicles should be provided.		
Waste management		During the operations phase, the Outjo Municipality's Office waste management team will service the proposed business development. Outjo Municipality to integrate the development into their formal waste collection strategy and that the waste is to be collected regularly and to be disposed of at an authorized disposal site. Illegal dumping of waste in any form is prohibited.	Regular inspection By EO	Outjo Municipality
Land use	The proposed development will result in a slight change in land use as some portions will be used for streets and public open spaces in addition to residential erven.	The change in land use will contribute to the efficient use of land in Outjo by converting unutilized, non-functional open spaces and streets into residential properties that will benefit the people of the town.	Monitored by the Project Manager	Outjo Municipality

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. The table below 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.					