ENVIRONMENTAL MANAGEMENT PLAN FOR THE:

SUBDIVISION OF ERF 740, OMULUNGA EXTENSION 2, GROOTFONTEIN INTO ERF A, ERF B AND THE REMAINDER OF ERF 740 (RE/740), SUBSEQUENT REZONING OF THE PROPOSED SUBDIVIDED ERF A FROM 'PRIVATE OPEN SPACE' TO 'GENERAL BUSINESS' (BUSINESS II) WITH A BULK OF 1 AND THE REZONING OF THE PROPOSED SUBDIVIDED ERF B FROM 'PRIVATE OPEN SPACE' TO 'STREET, GROOTFONTEIN, OTJOZONDJUPA REGION

APP-006805

Prepared by: Kamau Town Planning and Development Specialists
PO Box 22296, Windhoek
Contact Persons: Victoria Hatutale
Contact Number: 083 722 7000
Email: victoria@kamautpds.com

KAMAU
town planning &
development specialist

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Title	**Environmental Management Plan for the: SUBDIVISION OF ERF 740, OMULUNGA EXTENSION 2, GROOTFONTEIN INTO ERF A, ERF B AND THE REMAINDER OF ERF 740 (RE/740) (2) SUBSEQUENT REZONING OF THE PROPOSED SUBDIVIDED ERF A FROM 'PRIVATE OPEN SPACE' TO 'GENERAL BUSINESS' (BUSINESS II) WITH A BULK OF 1 (3) REZONING OF THE PROPOSED SUBDIVIDED ERF B FROM 'PRIVATE OPEN SPACE' TO 'STREET**		
Report Status	Final Report- 006805		
Proponent	Municipality of Grootfontein Contact Number: +264 67 243 101 Contact Person: Mr. Indileni Lungameni Email: itlungameni@gmail.com		
Environmental Assessment Practitioner	Kamau Town Planning and Development Specialists PO Box: 22296, Windhoek Contact Person: Victoria Hatutale Contact Number: +264837227000 Email: victoria@kamautpds.com		
Report Date	December 2025		
	Name	**Signature**	**Date**
Authors	Hope Mulonda		December 2025
Reviewer	Victoria Hatutale		December 2025

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ABBREVIATIONS

EMP Environmental Management Plan
EIA Environmental Impact Assessment
ECC Environmental Clearance Certificate
EAP Environmental Assessment Practitioner
PR Proponent's Representative
ECO Environmental Control Officer
TPDS Town Planning and Development Specialist
MET Ministry of Environment and Tourism
URPB Urban and Regional Planning Board

1. Introduction

Grootfontein of Municipality, hereinafter referred to as the proponent, intend to undertake the following activity:

- **Subdivision of Erf 740, Omulunga Extension 2, Grootfontein into Erf A, Erf B and the remainder of Erf 740 (RE/740).**
- **Subsequent rezoning of the proposed subdivided Erf A from 'Private Open Space' to 'General Business' (Business II) with a bulk of 1.**
- **Rezoning of the proposed subdivided Erf B From 'Private Open Space' to 'Street'**

The above development triggers listed activities in terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012).

An Environmental Management Plan (EMP) is one of the most important outputs of the EIA process as it synthesises all the proposed mitigation and monitoring actions, set to a timeline and with specific assigned responsibilities. This EMP details the mitigation and monitoring actions to be implemented during the following phases of these developments:

• Planning and Design – the period, prior to construction, during which preliminary legislative and administrative arrangements, necessary for the preparation of erven, are made and engineering designs are carried out. The preparation of construction tender documents forms part of this phase;

• Construction – the period during which the proponent, having dealt with the necessary legislative and administrative arrangements, appoints a contractor for the development of services infrastructure and construction of the road to service the development as well as any other construction process(s) within the development areas;

• Operation and Maintenance – the period during which the services infrastructure will be fully functional and maintained.

The decommissioning of the proposed development is not envisaged; however in the event that this should be considered some recommendations have been outlined in Table 6.

2. Proposed Development

In order to maximise the development potential of the property, the owner of Erf 740, Omulunga Extension 2, intends to subdivide it into Erf A, Erf B, and the Remainder of Erf 740. Subsequently, the owner would like to rezone the proposed subdivided Erf A from Private Open Space to General Business (Business II) with a bulk of 1 and rezone the proposed subdivided Erf B from Private Open Space to Street.

The remainder of Erf 740 will remain zoned as public open space. The purpose of this application was to allow for the construction of a shopping centre on the proposed Erf A, but unfortunately the construction is in progress or has already began without application approval, it's also to allow for the construction of a traffic circle on the proposed Erf B, and for Erf RE/740 to remain zoned as private open space, with a sports stadium as its primary land use activity.

The proposed subdivision and rezoning details are as follows:

Proposed Subdivision

- Erf Sizes

Erf 740 will be subdivided into Erf A, Erf B, and the Remainder, totalling 3 erven. The new erven sizes are indicated in the table below.

The proposed sizes for the erven, especially for Erf A, are determined by the proposed development and its intended uses.

SUBDIVISION OF ERF 740 OMULUNGA EXTENSION 2, GROOTFONTEIN			
Erf No.	**Size m²**	**Current Zoning**	**Proposed Zoning**
Erf A	9200m²	Private Open Space	General Business (Business II)
Erf B	495m²	Private Open Space	Street
RE/740	46 697m²	Private Open Space	Private Open Space
Total	**56 392m²**		

Table 1: The Proposed Sizes of the Subdivided Erven

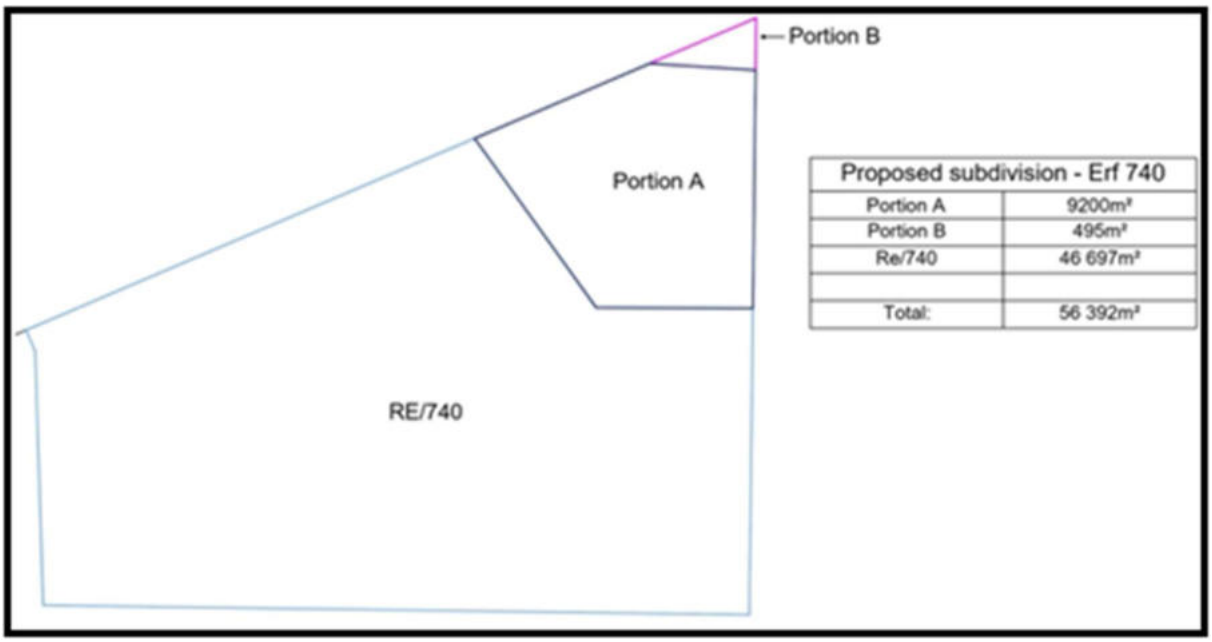

Figure 1: Proposed Subdivision on Erf 740

Proposed Rezoning

- Proposed Erf A

The proposed subdivided Erf A will be rezoned from Private Open Space to General Business (Business II) with a bulk of 1, and Erf B will be rezoned from Private Open Space to Street.

The proposed bulk of 1 for Erf A is to accommodate the development proposal for a shopping centre on the rezoned Erf A. The shopping centre will comprise a variety of shops listed as primary uses in the proposed General Business zone (Business II).

- Proposed Erf B

Erf B will be rezoned to Street. The proposed zoning for Erf B includes constructing a traffic circle to improve traffic flow and enhance accessibility to the proposed shopping centre.

Closure of a Private Open Space

The Municipality of Grootfontein intends on permanently closing the private open space on the proposed subdivided Erf A and B which will be rezoned Street and Business respectively. As per the Environmental Management Act, *'Use for nature conservation or zoned open space to any other land use'* requires a detailed assessment of the environmental, social, and cultural consequences, alongside strong public consultation and stakeholder engagement. If handled carefully, mitigation measures can be implemented to minimize negative effects.

The subdivision, permanent closure of a private open space, rezoning to business, and creation of a new street may not be undertaken without an environmental clearance certificate. Therefore, an Environmental Impact Assessment (EIA) process is required to obtain the necessary authorization for the activities to be carried out.

The Erf 740 is surrounded by a number of diverse zonings. Local Authority, Public Open Space, Residential 1, Residential 2, Residential 3, Business 2, Industrial 1, Industrial 2, Private Open Space and Undetermined all surround Erf 740.

The subject erf is surrounded by a mix of land-use activities, including Morning Star Boxing & Fitness Academy, Full Gospel Church Grootfontein, Kingdom Hall of Jehovah's Witnesses, Otjiwanda Secondary School, Oshamale Guesthouse, and Grootfontein Auto Electric & Truck Spares, among others. The erf is easily accessible by both motorised and non-motorised modes of transport due to its convenient location.

3. Roles and Responsibilities

The proponent (Grootfontein Municipality) is ultimately responsible for the implementation of the EMP, from the planning and design phase to the decommissioning phase (if these developments are in future decommissioned) of

these developments. The proponent will delegate this responsibility as the project progresses through its life cycle. The delegated responsibility for the effective implementation of this EMP will rest on the following key individuals:

• Proponent's Representative.
• Environmental Control Officer; and
• Contractor (Construction and Operations and Maintenance).

3.1 Proponent's Representative

The Grootfontein Municipality should assign the responsibility of managing all aspects of these developments for all development phases (including all contracts for work outsourced) to a designated member of staff, referred to in this EMP as the Proponent's Representative (CR). The Grootfontein Municipality may decide to assign this role to one person for the full duration of these developments, or may assign a different PR to each of the development phases – i.e. one for the planning and design phase, one for the construction phase and one for the operation and maintenance phase. The CR's responsibilities are as follows:

Responsibility	Project Phase
Making sure that the necessary approvals and permissions laid out in Table 2 are obtained/adhered to.	•Throughout the lifecycle of these developments
Making sure that the relevant provisions detailed in Table 3 are addressed during planning and design phase.	• Planning and design phase
Monitoring the implementation of the EMP monthly.	• Construction • Operation and maintenance
Suspending/evicting individuals and/or equipment not complying with the EMP	• Construction • Operation and maintenance
Issuing fines for contravening EMP provisions	• Construction • Operation and maintenance

3.2. Environmental Control Officer

The CR should assign the responsibility of overseeing the implementation of the whole EMP on the ground during the construction and operation and maintenance phases to an independent external consultant, referred to in this EMP as the Environmental Control Officer (ECO). The CR/ Grootfontein Municipality may decide to assign this role to one person for both phases and may assign a different ECO for each phase. The ECO will have the following responsibilities during the construction and operation and maintenance phases of these developments:

- Management and facilitation of communication between the CR, the contractors, and Interested and Affected Parties (I&APs) with regard to this EMP;

- Conducting site inspections (recommended minimum frequency is weekly) of all construction and/or infrastructure maintenance areas with respect to the implementation of this EMP (audit the implementation of the EMP);
- Assisting the Contractor in finding solutions with respect to matters pertaining to the implementation of this EMP;
- Advising the PR on the removal of person(s) and/or equipment not complying with the provisions of this EMP;
- Making recommendations to the PR with respect to the issuing of fines for contraventions of the EMP; and
- Undertaking an annual review and bi-annual audit of the EMP and recommending additions and/or changes to this document

3.3 Contractor

Contractors appointed are automatically responsible for implementing all provisions contained within the relevant chapters of this EMP. Contractors will be responsible for the implementation of this EMP applicable to any work outsourced to subcontractors. Table 4 applies to contractors appointed during the construction phase and Table 5 to those appointed during the operation and maintenance phase. To ensure effective environmental management, the aforementioned chapters should be included in the applicable contracts for outsourced construction, operation, and maintenance work.

The tables in the following chapter (Chapter 4) detail the management measures associated with the roles and responsibilities that have been laid out in this chapter.

4. Management Actions

The aim of the management actions in this chapter of the EMP is to avoid potential impacts where possible. Where impacts cannot be avoided, measures are provided to reduce the significance of these impacts.

The following tables provide the management actions recommended to manage the potential impacts rated in the scoping-level EA conducted for these developments. These management actions have been organised temporally according to project phase:

- Applicable legislation (Table 2);
- Planning and design phase management actions (Table 3);
- Construction phase management actions (Table 4);
- Operation and maintenance phase management actions (Table 5); and
- Decommissioning phase management actions (Table 6).
- The proponent should assess these commitments in detail and should acknowledge their commitment to the specific management actions detailed in the tables below.

4.1 Assumptions and Limitations

This EMP has been drafted with the acknowledgment of the following assumptions and limitations:

- This EMP has been drafted based on the scoping-level Environmental Assessment (EA) conducted for the proposed development. Kamau TPDS will not be held responsible for the potential consequences that may result from any alterations to the abovementioned layout.
- It is assumed that construction labourers will be sourced mostly from the Grootfontein Municipality townlands area and that migrant labourers (if applicable) will be housed in established accommodation facilities within Grootfontein.
- No engineering designs have been carried out for the development of the associated services infrastructure (roads, potable water, storm water, sewerage, and electrical reticulations).

4.2 Applicable Legislation

Legal provisions that have relevance to various aspects of these developments are listed in Table 2 below.

Legislation	Provision
Constitution of the Republic of Namibia (1990)	Articles 91(c) and 95(i) commit the state to promoting environmental welfare by: • Preventing overuse of biological resources • Limiting exploitation of non-renewable resources • Maintaining ecosystem functionality • Preserving biodiversity.
Environmental Management Act No. 7 of 2007	Promotes sustainable environmental management and responsible use of natural resources. Establishes principles for decision-making, public participation, and environmental assessments. Gives legal effect to the EIA Policy.
Water Resources Management Act No. 11 of 2013	Regulates the use and protection of water resources. Requires that effluent be treated to certain standards and includes provisions to prevent surface and groundwater pollution. Emphasises sustainable water use.
Pollution Control and Waste Management Bill	Aims to regulate and prevent the discharge of pollutants into air and water. Provides for general waste management and the licensing of emissions and discharges into the environment.
Labour Act No. 11 of 2007	Section 135(f): Requires owners or occupiers of premises to ensure fire safety and the protection of people in buildings where machinery is used.
Noise Control Regulations (under the Labour Act)	Requires that any development assess potential noise impacts before approval.

Town and Regional Planners Act No. 9 of 1996	Establishes the Namibian Council for Town and Regional Planners. Provides for registration, conduct, and disciplinary control. Covers urban planning tools such as structure plans, zoning, subdivisions, and land consolidation.
Land Survey Act No. 33 of 1993	Regulates the surveying of land and provides for related matters.
Townships and Division of Land Ordinance 11 of 1963 (as amended)	Governs the establishment of townships and the regulation of land development, subdivision, and related land use control matters.
Local Authorities Act No. 23 of 1992	Provides for the powers, duties, and functions of municipalities, including planning and service provision related to land use and development.
Soil Conservation Act No. 76 of 1969	Promotes the prevention of soil erosion and encourages conservation of soil, vegetation, and water resources. Proper mitigation during project implementation is expected to reduce environmental impact to moderate or low.
Public and Environmental Health Act No. 1 of 2015	Aims to protect public health and ensure a clean and healthy environment. Includes general health regulations and provisions specific to communicable diseases (e.g. COVID-19 regulations).
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process
Roads Ordinance 17 of 1972	Section 3.1 deals with width of proclaimed roads and road reserve boundaries, Section 27.1 is concerned with the control of traffic on urban trunk and main roads, Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads.

Table 2: Legislation applicable to proposed development

4.3 Planning and Design Phase

The CR should ensure that the management actions detailed below should be adhered to during the period before the construction of the development starts.

Aspect	Potential Impact	Mitigation Measure	Monitoring / Action
Drainage System	The area the development is to take place is a passageway for rainwater coming from town	The current drainage system is planned to be substantially upgraded, with new culverts, ducts, and drainage points incorporated into the design. This significantly	

Aspect	Potential Impact	Mitigation Measure	Monitoring / Action
		alleviate pressure on the entire catchment area.	
Traffic	Significant increase in traffic	A new traffic circle will be constructed on Erf B, along with upgraded entrance and exit points, as part of the development agreement with the Municipality of Grootfontein.	Periodic traffic observation
Safety of School Children	Injury or accident of school children while crossing the road	The upgrades on the road (Traffic circle) detailed in the engineering and site layout plans, are designed to ease traffic flow, reduce existing congestion, and enhance safety for pedestrians and schoolchildren through the inclusion of designated crossings and organised vehicle movement.	
Sewer and Water Use	Sewage linkage and water wastage	Erf 740 is connected to the bulk municipal water, electricity, and sewer infrastructure that runs along the developed streets of Omulunga Extension 2.	The municipality to ensure the waste is well handled and that it does not leak or become a disturbance to the development and neighbourhood. Replace all infrastructure that is not in good condition for usage to avoid sewage linkage and water wastage
Noise Disturbance	Potential nuisance from the operating business	The development is a shopping center with operational hours limited to 7 AM – 7 PM, which might help minimise any potential disturbances.	

Aspect	Potential Impact	Mitigation Measure	Monitoring / Action
Energy Use		Erf 740 is fully serviced with municipal water, sewer, and electricity infrastructure. Given the scale of the proposed development, any necessary infrastructure upgrades will be carried out by the owner of Erf 740 in accordance with the Municipality's regulations.	Other alternative energy sources can be used e.g. solar panels for the development (Shopping center).

Table 3: Planning and design management actions

4.4 Construction Phase

The management actions listed in Table 4 apply during the construction phase. This table may be used as a guide when developing EMPs for other construction activities within these development areas.

Environmental Feature	Impact	Management Actions	Responsible Person
EMP training	Lack of EMP Awareness and the implications thereof.	All construction workers are to undergo EMP training that should include as a minimum the following: • Explanation of the importance of complying with the EMP. • Discussion of the potential environmental impacts of construction activities. • Employees' roles and responsibilities, including emergency preparedness. • Explanation of the mitigation measures that must be implemented when work groups carry out their respective activities.	Contractor, CR
Conservation of vegetation	Loss of biodiversity	• The layout and development design should incorporate existing trees. • The Contractor should compile a Plant Management Plan which should include the following as a minimum:	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		○ Trees to be preserved should be marked with paint (or other means to be readily visible) and protected. ○ Prevent the destruction of protected and endemic plant species. If trees with stem diameter > 20mm be found within the development site, it should be conserved and be made part of the development. ○ Trees, which are impossible to conserve, need to be identified and. ○ The Contractor should apply to the local authority for a permit to remove these trees (prior to removing them). ○ Special protection should be accorded to the protected endemic species, which are to be found within the development area (As per the Forest Act 12 of 2001 and Forest Regulations of 2015). ○ Each tree that is removed needs to be replaced with an indigenous tree species after construction. ○ Some of these trees can be obtained at the National Botanical Research Institute (NBRI) or at a commercial nursery. • Only a limited width +/- 5 m on the side of roads may be partially cleared of vegetation. • Workers are prohibited from collecting wood or other plant products on or near work sites. • No alien species may be planted on or near work areas.	
Lay-down areas and materials camp	Loss of biodiversity	Suitable locations for the contractors lay-down areas and materials camp should be identified with the assistance of	Contractor and CR

Environmental Feature	Impact	Management Actions	Responsible Person
		the PR and the following should be considered in selecting these sites: • The areas designated for the services infrastructure should be used as far possible. • Second option should be degraded land. • Avoid sensitive areas (e.g. rivers/drainage lines).	
Hazardous waste	Contamination of surface and groundwater sources.	• All heavy construction vehicles and equipment on site should be provided with a drip tray. • All heavy construction vehicles should be maintained regularly to prevent oil leakages. • Maintenance and washing of construction vehicles should take place only at a designated workshop area and should not take place on open soil.	Contractor
Water, Sewage, and grey water	Contamination of surface and groundwater sources and water wasting	• The wash water (grey water) collected from the cleaning of equipment on-site should not be left standing for long periods of time as this promotes parasite and bacterial proliferation. • Grey water should be recycled: o Used for dust suppression. o Used to water a vegetable garden, or to support a small nursery. o Used (reused) to clean equipment. • Grey water that is not recycled should be removed on a regular basis. • No dumping of waste products of any kind in or near water bodies. • Heavy construction vehicles should be kept out of any water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with. • Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles. • Contaminated runoff from the construction sites should be prevented from entering the surface and ground water bodies. • All materials on the construction site should be properly stored. • Disposal of waste from the sites should be properly managed and taken to the designated landfill site in Grootfontein. • Construction workers should be given ablution facilities at the construction sites that are located at least 30 m away from any surface water and ground water resources and should be regularly serviced. • Washing of personnel or any equipment should not be allowed on site. Should it be necessary to wash construction equipment these should be done at an area properly suited and prepared to receive and contain polluted waters.	
General waste	Visual impact and soil contamination	• The construction site should be always kept tidy. • All domestic and general construction waste produced daily should be cleaned and contained daily. • No waste may be buried or burned.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• Waste containers (bins) should be emptied regularly and removed from site to a recognised (municipal) waste disposal site. • All recyclable waste needs to be taken to the nearest recycling depot where practical. • Enough separate bins for hazardous and domestic/general waste must be provided on site. These should be clearly marked as such. • Construction labourers should be sensitised to dispose of waste in a responsible manner and not to litter. • No waste may remain on site after the completion of the project. • Strictly, no burning of waste on the site or at the disposal site is allowed as it possess environmental and public health impacts;	
Topsoil	Loss of topsoil and associated opportunity costs	• When excavations are carried out, topsoil2 should be stockpiled in a demarcated area. • Stockpiled topsoil should be used to rehabilitate post-construction degraded areas and/or other nearby degraded areas if such an area is located a reasonable distance from the stockpile.	Contractor
Rehabilitation	Visual impact	• Upon completion of the construction phase consultations should be held with the local community/property owner(s) regarding the postconstruction use of remaining excavated areas (if applicable).	Contractor, CR

Environmental Feature	Impact	Management Actions	Responsible Person
		• If no post-construction uses are requested, all excavated/ degraded areas need to be rehabilitated as follows: o Excavated areas may only be backfilled with clean or inert fill. No material of hazardous nature (e.g. sand removed with an oil spill) may be dumped as backfill. o Rehabilitated excavated areas need to match the contours of the existing landscape. o The rehabilitated area should not be higher (or lower) than nearby drainage channels. This ensures the efficiency of revegetation and reduces the chances of potential erosion. o Topsoil is to be spread across excavated areas evenly. Deep ripping of areas to be rehabilitated is required, not just simple scarification, to enable rip lines to hold water after heavy rainfall. o Ripping should be done along slopes, not up and down a slope, which could lead to enhanced erosion.	
Road safety	Injury or loss of life	• Demarcate roads to be used by construction vehicles clearly. • Off-road driving should not be allowed. • All vehicles that transport materials to and from the site must be roadworthy. • Drivers that transport materials should have a valid driver's license and should adhere to all traffic rules. • Loads upon vehicles should be properly secured to avoid items falling off the vehicle.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
Safety around work sites	Injury or loss of life	• Excavations should be left open for the shortest time possible. • Excavate short lengths of trenches and box areas for services or foundations in a manner that will not leave the trench unattended for more than 24 hours. • Demarcate excavated areas and topsoil stockpiles with danger tape. • All building materials and equipment are to be stored only within set out and demarcated work areas. • Comply with all waste related management actions stated above in this table.	Contractor
Ablutions	Noncompliance with Health and Safety Regulations	• Separate toilets should be available for men and women and should clearly be indicated as such. • Portable toilets (i.e. easily transportable) should be available at every construction site: o 1 toilet for every 15 females. o 1 toilet for every 30 males. o Sewage needs to be removed on a regular basis to an approved (municipal) sewage disposal site in Grootfontein. o Alternatively, sewage may be pumped into sealable containers and stored until it can be removed. o Workers responsible for cleaning the toilets should be provided with environmentally friendly detergents, latex gloves, and masks.	Contractor
Open fires	Injury or loss of life	• No open fires may be made anywhere on site.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
General health and safety	Injury or loss of life	• A fully stocked first aid kit should permanently be available on-site as well as an adequately trained member of staff capable of administering first aid. • All workers should have access to the relevant personal protective equipment (PPE). • Sufficient potable water reserves should be always available to workers. No person should be allowed to smoke close to fuel storage facilities or portable toilets (if toilets are chemical toilets – the chemicals are flammable). • No workers should be allowed to drink alcohol during work hours. • No workers should be allowed on site if under the influence of alcohol. • Building rubble and domestic waste should be stored in skips. • Condoms should be accessible/ available to all construction workers. • Access to Antiretroviral medication should be facilitated.	Contractor
Dust	Nuisance and health impacts	• A watering truck should be used on gravel roads with the heaviest vehicle movement especially during dry and windy conditions. However, due consideration should be given to water restrictions during times of drought. • The use of waterless dust suppression means (e.g. lignosulphonate products such as Dustex) should be considered.	Contractor

Environmental Feature	Impact	Management Actions	Responsible Person
		• Cover any stockpiles with plastic to minimise windblown dust. • Dust protection masks should be provided to workers if they complain about dust. • Vehicles travelling to and from the construction site must adhere to the speed limits to avoid producing excessive dust. A speed limit of 40 km/hr should be set for all vehicles travelling over exposed areas.	
Noise	Nuisance impacts	Work hours should be restricted to between 08h00 and 17h00 and 7:30 – 13:00 on Saturdays where construction involving the use of heavy equipment, power tools and the movement of heavy vehicles is less than 500 m from residential areas. If an exception to this provision is required, all residents within the 500 m radius should be given 1 week's written notice. • Provide ear plugs and earmuffs to staff undertaking the noisy activity or working within proximity thereof or alternatively, all construction workers should be equipped with ear protection equipment.	Contractor

Table 4: Construction phase management actions

4.5 Operation and Maintenance Phase

The management actions included in Table 5 below apply during the operation and maintenance phase of these developments

Environmental Feature	Impact	Management Actions	Person Responsible
EMP training	Lack of EMP awareness and the implications	All contractors appointed for maintenance work on the respective streets must ensure that all personnel are aware of necessary health, safety and	Contractor

Environmental Feature	Impact	Management Actions	Person Responsible
	thereof	environmental considerations applicable to their respective work.	
Water	Surface and groundwater contamination	Ensure that surface run-off water accumulating on-site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment.	Proponent, Contractor,
Aesthetics	Visual impacts	The proponent should consult with a view to incorporate the relevant local/ national/ international development guidelines which addresses the following: • The incorporation of indigenous vegetation into the development. • To mark the area with appropriate road warning signs (e.g. the road curves to the left/right) • 'green' technologies should be implemented within the architectural designs and building materials of the development where possible to minimize the visual prominence of such a development within the more natural surrounding landscape. • keep existing trees, introduce tall indigenous trees; keep structures unpainted and minimizing large advertising billboards. • No illegal dumping of waste should be allowed.	Proponent
Noise	Nuisance impacts	No activity having a potential noise impact should be allowed after 18:00 hours if possible. • Do not allow commercial activities that generate excessive noise levels.	Proponent

Environmental Feature	Impact	Management Actions	Person Responsible
		• Continuous monitoring of noise levels should be conducted to make sure the noise levels does not exceed acceptable limits.	
Socio Economic	Social Impacts	The local community be consulted in terms of possible job creation opportunities and must be given priority if unspecialised job vacancies are available.	Proponent

Table 5: Operation and maintenance management actions

4.6 Decommissioning Phase

The decommissioning of these developments is not foreseen as the intended development is envisaged to be permanent. If this infrastructure development is decommissioned the following management actions should apply.

Environmental Feature	Management Actions
Decommissioning activity	Many of the mitigation measures prescribed for construction activity for these developments would be applicable to some of the decommissioning activities. These should be adhered to where applicable.

Table 6: Decommissioning phase management actions

5. Conclusion

The management actions included in this report aim to assist in the avoidance, management and/or mitigation of potential impacts on the environment that may result from the proposed activities. Should the measures recommended in this EMP be implemented and monitored, Kamau TPDS is confident that the risks identified in the FESR can be reduced to acceptable levels.