

# *Environmental Assessment Scoping Report for:*

*April 2023*

*Township Establishment,  
Creation of Street, and  
Installation of Bulk services on  
consolidated Erf 5952 Katima  
Mulilo Extension 1 to be known  
as Katima Mulilo Extension 29,  
Katima Mulilo, Zambezi Region*

**APP-001280**





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## PROJECT DETAILS

<b>Title</b>	Environmental Scoping Report for the: <ul style="list-style-type: none"> <li>Township Establishment, Creation of Street, and Installation of Bulk services on consolidated Erf 5952 Katima Mulilo Extension 1 to be known as Katima Mulilo Extension 29, Katima Mulilo, Zambezi Region</li> </ul>		
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## EXECUTIVE SUMMARY

### Introduction

The Katima Mulilo Town Council, hereinafter referred to as the proponent, intends to undertake the following activities:

- **Permanent Closure of Erven 326/Rem and 3888, Katima Mulilo Extension 1 as streets;**
- **Rezoning of Erven 326/Rem and 3888, Katima Mulilo Extension 1 from “Street” to “Undetermined”;**
- **Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space;**
- **Rezoning of Erf 3889, Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”;**
- **Permanent closure of Erven 3950 and 3951, Katima Mulilo Extension 1 as Public Open Spaces;**
- **Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”;**
- **Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”;**
- **Rezoning of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”;**
- **Rezoning of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”;**
- **Consolidation of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1 and**
- **Layout Approval and Township Establishment on Erf 5952, Katima Mulilo Extension 1, Comprising of 35 Erven and the Remainder to be known as Katima Mulilo Extension 29.**

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) which may not be undertaken without an Environmental Clearance Certificate (ECC).

As such the proponent appointed Stubenrauch Planning Consultants (SPC) to undertake an independent Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above activities. The competent authority is the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs and Forestry (MEFT: DEAF).

### Project Description

The Katima Mulilo Town Council intends to establish Katima Mulilo Extension 29 which is located on Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947, 3950-3951 and Erf 5952 which are in the neighborhood of Katima Mulilo Extension 1. The area is currently vacant and ideally situated and suited for the proposed township establishment. The proposed layout

comprises mostly of General Business zoned erven with Local Authority, Private Open Space, Public Open Space zoned and Street erven.

The Katima Mulilo Development Trust was desirous to amend the planned but undeveloped commercial area within the western side of Katima Mulilo Extension 1 as part of a broader project to improve the surroundings of the central business area with the aim of it becoming the new Central Business District. The layout design that currently exists in the area was deemed not favourable in terms of promoting the development of a modern and timeless state of the art business centre for Katima Mulilo. As such the Council entered into a memorandum of understanding with the Katima Development Trust to re-plan the area in question.

The re-planning that is currently being done in this area:

- (a) Create improved vehicular, pedestrian and bicycle traffic into the new commercial area from the surrounding streets,
- (b) Create a sense of space by introducing landscaped areas and public open spaces within the area to be re-designed,
- (c) Enhance the existing drainage canal, making it the centre piece of a new boulevard

The Zambezi Waterfront area, which is reserved for mainly hospitality use, is located directly to the north of the new CBD site while the existing commercial heart is located generally to the south of the envisaged modern and innovative CBD to be created as result of this re-planning exercise.

This new Central Business District (CBD) of Katima Mulilo is to comprise of the following development components:

- A central tree lined boulevard containing a drainage canal, public open space and a two laned street.
- A central Park (Public Open Space)
- A series of blocks zoned for business use
- Some erven reserved for Private Open Space to accommodate the sports field
- An erf reserved for a taxi rank

The area to be used for the development comprises of approximately 30 hectares, all of which is within Katima Mulilo Extension 1.

### Public Participation

Communication with Interested and Affected Parties (I&APs) about the proposed development was facilitated through the following means and in this order:

- A Background Information Document (BID) containing descriptive information about the proposed activities was compiled and sent out to all identified and registered I&APs via email on **17 November 2022**;
- Notices were placed in The New Era and The Namibian newspapers dated **17 November 2022 and 24 November 2022**, briefly explaining the activity and its locality, inviting members of the public to register as I&APs (**Appendix B**);
- A notices was fixed at the project site (see **Appendix A**); and
- A public meeting was held on **29 November 2022** in Katima Mulilo (see **Appendix C**).

Public consultation was carried out according to the Environmental Management Act's EIA Regulations. After the initial notification, I&APs were given two weeks to submit their comments on the project (until **8 December 2022**). The comment period will remain open until the final scoping report is submitted to MEFT.

The Draft Scoping Report was circulated from the **27<sup>th</sup> of March 2023 until 4<sup>th</sup> of April 2023** so that the public could review and comment on it. No comments were received during the above comment period. The comment period will remain open until the final scoping report is submitted to MEFT.

### Conclusions and Recommendations

With reference to **Table 9**, none of the negative construction phase impacts were deemed to have a high significance impact on the environment. The construction impacts were assessed to a **Medium to Low (negative)** significance, without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction phase impacts is likely to be reduced to a **Low (negative)**.

The most significant **Medium (positive)** impact is the social impact directly associated with the intended development of the township which aims to offer business properties opportunities for the residents in Katima Mulilo.

It is recommended that this project be authorised because should the development not proceed the subject area will remain vacant and undeveloped. The local community is expected to benefit from the development as a result of the potential job opportunities during construction as well as the increased development within the area. Furthermore, the community of Katima Mulilo are further expected to benefit from the new township which will make available much needed business erven. The significance of the social impact was therefore deemed to be Medium (positive).

The “no go” alternative was thus deemed to have a High (negative) impact, as all the benefits resulting from the development would not be realised.

The significance of negative impacts can be reduced with effective and appropriate mitigation provided in this report and the EMP. If authorised, the implementation of the EMP should be included as a condition of approval.

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## LIST OF ACRONYMS

<b>AIDS</b>	Acquired Immune Deficiency Syndrome
<b>CRR</b>	Comments and response report
<b>dB</b>	Decibels
<b>DESR</b>	Draft Environmental Scoping Report
<b>EA</b>	Environmental Assessment
<b>EAP</b>	Environmental Assessment Practitioner
<b>EAR</b>	Environmental Assessment Report
<b>ECC</b>	Environmental Clearance Certificate
<b>ECO</b>	Environmental Control Officer
<b>EIA</b>	Environmental Impact Assessment
<b>EMA</b>	Environmental Management Act
<b>EMP</b>	Environmental Management Plan
<b>FESR</b>	Final Environmental Scoping Report
<b>GTZ</b>	Gesellschaft für Technische Zusammenarbeit
<b>HIV</b>	Human Immunodeficiency Virus
<b>I&amp;AP</b>	Interested and Affected Party
<b>IUCN</b>	International Union for Conservation of Nature
<b>MET</b>	Ministry of Environment and Tourism
<b>MEFT: DEAF</b>	Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs and Forestry
<b>MURD</b>	Ministry of Urban and Rural Development
<b>MWTC</b>	Ministry of Works Transport and Communication
<b>NAMPAB</b>	Namibia Planning Advisory Board
<b>NPC</b>	Namibia Planning Commission
<b>KMTC</b>	Katima Mulilo Town Council
<b>PPP</b>	Public Participation Process
<b>SADC</b>	Southern African Development Community
<b>SPC</b>	Stubenrauch Planning Consultants
<b>USAID</b>	United States Agency for International Development
<b>VMMC</b>	Voluntary Medical Male Circumcision

# 1 INTRODUCTION

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## 1.1 PROJECT BACKGROUND

The Katima Mulilo Town Council, hereinafter referred to as the proponent, intends to undertake the following activities:

- **Permanent Closure of Erven 326/Rem and 3888, Katima Mulilo Extension 1 as streets;**
- **Rezoning of Erven 326/Rem and 3888, Katima Mulilo Extension 1 from “Street” to “Undetermined”;**
- **Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space;**
- **Rezoning of Erf 3889, Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”;**
- **Permanent closure of Erven 3950 and 3951, Katima Mulilo Extension 1 as Public Open Spaces;**
- **Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”;**
- **Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”;**
- **Rezoning of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”;**
- **Rezoning of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”;**
- **Consolidation of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1;**
- **Layout Approval and Township Establishment on Erf 5952, Katima Mulilo Extension 1, Comprising of 35 Erven and the Remainder to be known as Katima Mulilo Extension 29.**

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) which may not be undertaken without an Environmental Clearance Certificate (ECC). These listed activities are provided in **Table 1**.

**Table 1:** List of triggered activities identified in the EIA Regulations which apply to the proposed project

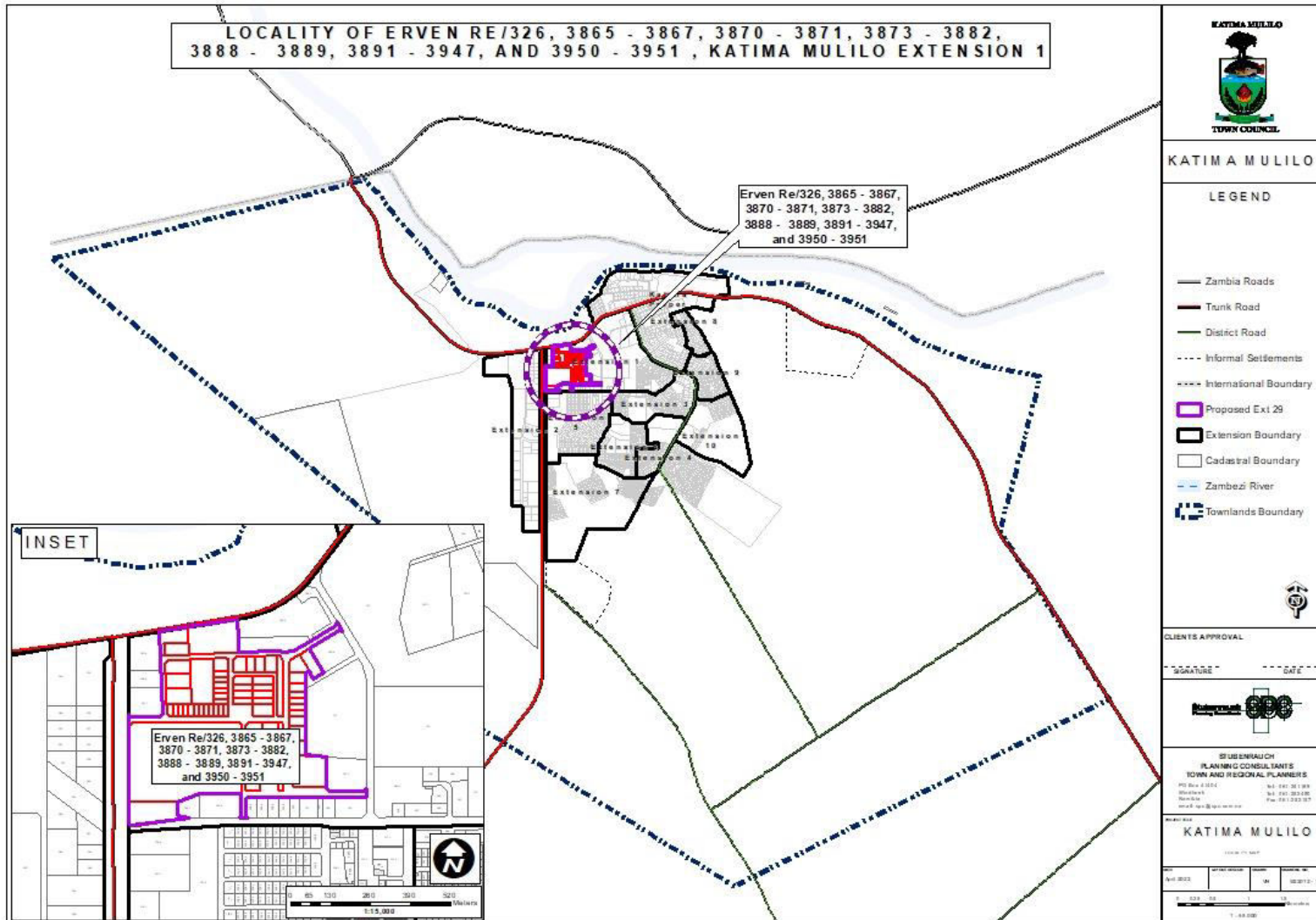
Activity description and No(s):	Description of relevant activity	The portion of the development as per the project description that relates to the applicable listed activity
Activity 5.1 (d) Land Use and Development Activities	The rezoning of land from use for nature conservation or zoned open space to any other land use.	The proposed project involves the rezoning of land from “Public Open Space” to “Undetermined”
Activity 10.1 (a) Infrastructure	The construction of oil, water, gas and petrochemical and other bulk supply pipelines;	The proposed project involves the installation of bulk services.
Activity 10.1 (b) Infrastructure	The construction of Public roads	The proposed project includes the construction of roads.
Activity 10.2 (a) Infrastructure	The route determination of roads and design of associated physical infrastructure where –it is a public road	The proposed project includes the route determination of roads.

The above activities will be discussed in more detail in Chapter 4 of this report. The proponent appointed Stubenrauch Planning Consultants (SPC) to undertake an independent Environmental Assessment (EA) in order to obtain an Environmental Clearance Certificate (ECC) for the above activities. The competent authority is the Ministry of Environment, Forestry and Tourism: Department of Environmental Affairs and Forestry (MEFT: DEAF).

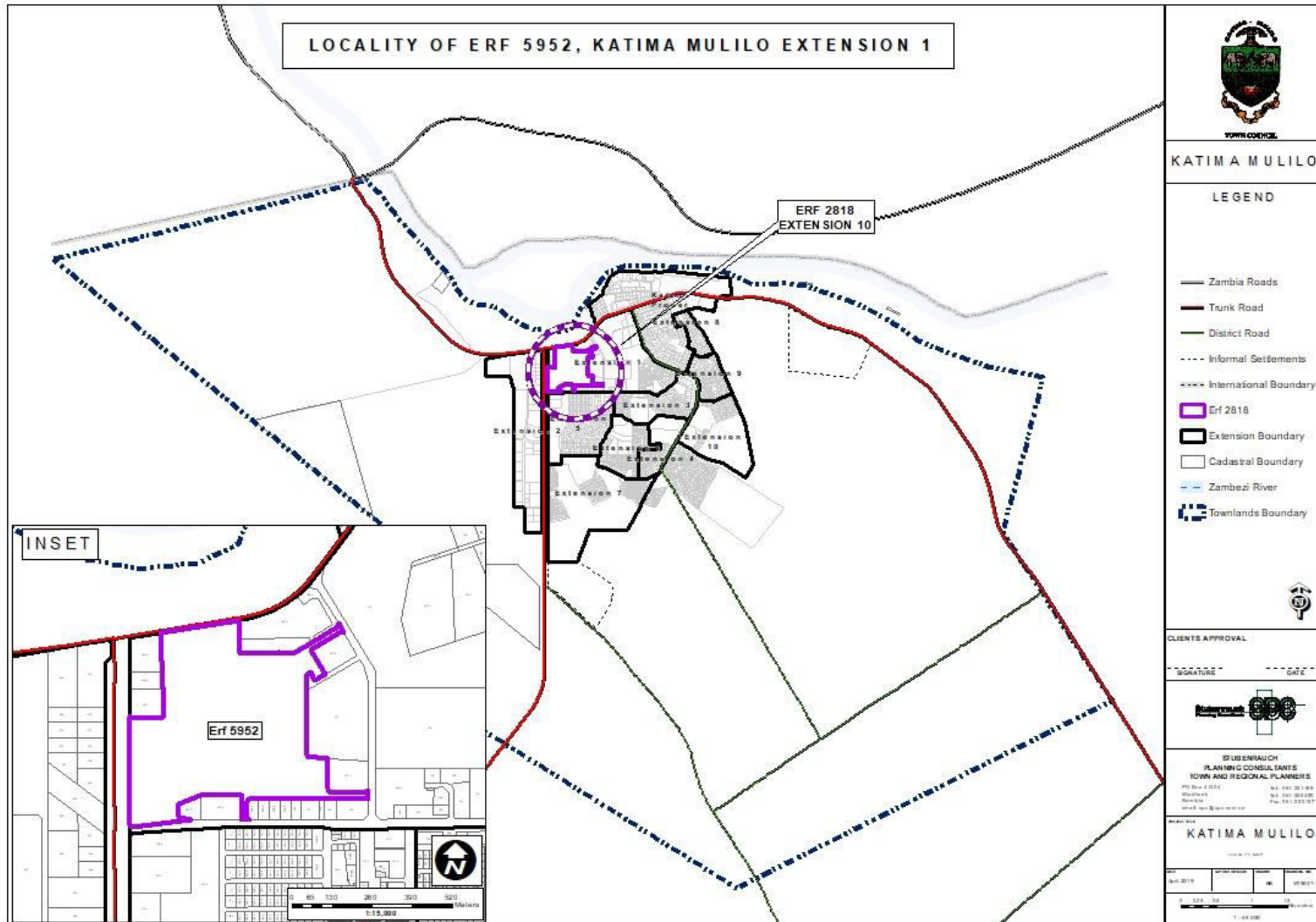
The process will be undertaken in terms of the gazetted Namibian Government Notice No. 30 Environmental Impact Assessment Regulations (herein referred to as EIA Regulations) and the Environmental Management Act (No 7 of 2007) (herein referred to as the EMA). The EIA process will investigate if there are any potential significant biophysical and socio-economic impacts associated with the intended activities. The EIA process would also serve to provide an opportunity for the public and key stakeholders to provide comments and participate in the process.

## **1.2 PROJECT LOCATION**

Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947, 3950-3951 and Erf 5952 are located in the neighborhood of Katima Mulilo Extension 1 as depicted in **Figure 1 and 2** below. The B8 road runs along the Western and Northern boundary of the site.



**Figure 1:** Locality map of Erven 326/Rem, 3865-3867, 3870-3871, 3873-3882, 3888-3889, 3891-3947, 3950-3951 Katima Mulilo Extension 1



**Figure 2:** Locality map of Erf 5952, Katima Mulilo

### **1.3 TERMS OF REFERENCE AND SCOPE OF PROJECT**

The scope of this project is limited to conducting an Environmental Impact Assessment and applying for an Environmental Clearance Certificate for the following as indicated in section 1.1 above:

- **Permanent Closure of Erven 326/Rem and 3888, Katima Mulilo Extension 1 as streets;**
- **Rezoning of Erven 326/Rem and 3888, Katima Mulilo Extension 1 from “Street” to “Undetermined”;**
- **Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space;**
- **Rezoning of Erf 3889, Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”;**
- **Permanent closure of Erven 3950 and 3951, Katima Mulilo Extension 1 as Public Open Spaces;**
- **Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”;**
- **Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”;**
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- **Consolidation of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1 and**
- **Layout Approval and Township Establishment on Erf 5952, Katima Mulilo Extension 1, Comprising of 35 Erven and the Remainder to be known as Katima Mulilo Extension 29.**

### **1.4 ASSUMPTIONS AND LIMITATIONS**

In undertaking this investigation and compiling the Environmental Scoping Report, the following assumptions and limitations apply:

- Assumes the information provided by the proponent is accurate and discloses all information available.
- The limitation that no alternative except for the preferred layout plans and the ‘no-go’ option was considered during this assessment. The unique character and appeal of Katima Mulilo were however taken into consideration with the design perspective. Various layout alternatives were initially considered by the proponent, also taking terrain and environmental constraints into account, thus the current design plans being the most feasible result.



### 1.5 CONTENT OF ENVIRONMENTAL ASSESSMENT REPORT

Section 8 of the gazetted EIA Regulations requires specific content to be addressed in a Scoping / Environmental Assessment Report. **Table 2** below is an extract from the EMA and highlights the required contents of a Scoping / Environmental Assessment Report whilst assisting the reader to find the relevant section in the report.

**Table 2:** Contents of the Scoping / Environmental Assessment Report

Section	Description	Section of FESR/ Annexure
8 (a)	The curriculum vitae of the Environmental Assessment Practitioner (EAP) who prepared the report;	Refer to <b>Annexure E</b>
8 (b)	A description of the proposed activity;	Refer to Chapter 4
8 (c)	A description of the site on which the activity is to be undertaken and the location of the activity on the site;	Refer to Chapter 3
8 (d)	A description of the environment that may be affected by the proposed activity and the manner in which the geographical, physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	Refer to Chapter 3
8 (e)	An identification of laws and guidelines that have been considered in the preparation of the scoping report;	Refer to Chapter 2
8 (f)	Details of the public consultation process conducted in terms of regulation 7(1) in connection with the application, including	Refer to Chapter 5
	(i) the steps that were taken to notify potentially interested and affected parties of the proposed application	Refer to Chapter 5
	(ii) proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;	Refer to <b>Annexures A and B</b> for site notices and advertisements respectively.
	(iii) a list of all persons, organisations and organs of state that were registered in terms	Refer to <b>Annexure C</b>

<b>Section</b>	<b>Description</b>	<b>Section of FESR/ Annexure</b>
	of regulation 22 as interested and affected parties in relation to the application;	
	(iv) a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues;	Refer to <b>Annexure C</b>
8 (g)	A description of the need and desirability of the proposed listed activity and any identified alternatives to the proposed activity that are feasible and reasonable, including the advantages and disadvantages that the proposed activity or alternatives have on the environment and on the community that may be affected by the activity;	Refer to Chapter 4
8 (h)	A description and assessment of the significance of any significant effects, including cumulative effects, that may occur as a result of the undertaking of the activity or identified alternatives or as a result of any construction, erection or decommissioning associated with the undertaking of the proposed listed activity;	Refer to Chapter 7
8 (i)	terms of reference for the detailed assessment;	NB – Assessment of impacts are included in this EA Report
8 (j)	An environmental management plan	Refer to <b>Annexure F</b>

## 2 LEGAL FRAMEWORK

### 2.1 LEGISLATION RELEVANT TO THE PROPOSED DEVELOPMENT

There are multiple legal instruments that regulate and have a bearing on good environmental management in Namibia. **Table 3** below provides a summary of the legal instruments considered to be relevant to this development and the environmental assessment process.

**Table 3:** Legislation applicable to the proposed development

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
The Constitution of the Republic of Namibia as Amended	<p>Article 91 (c) provides for duty to guard against “the degradation and destruction of ecosystems and failure to protect the beauty and character of Namibia.”</p> <p>Article 95(l) deals with the “maintenance of ecosystems, essential ecological processes and biological diversity” and sustainable use of the country’s natural resources.</p>	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	<p>Section 2 outlines the objective of the Act and the means to achieve that.</p> <p>Section 3 details the principle of Environmental Management</p>	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	<p>GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate.</p> <p>GN 30 provides the regulations governing the environmental assessment (EA) process.</p>	<p>The following listed activity was triggered by the proposed development:</p> <p><b>Activity 5.1 (d) Land Use and Development activities</b></p> <p><b>Activity 10.1 (a) Infrastructure</b></p> <p><b>Activity 10.1 b) Infrastructure</b></p> <p><b>Activity 10.2 (a) Infrastructure</b></p>
Convention on Biological Diversity (1992)	Article 1 lists the conservation of biological diversity amongst the objectives of the convention.	The project should consider the impact it will have on the biodiversity of the area.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Draft Procedures and Guidelines for conducting EIAs and compiling EMPs (2008)	Part 1, Stage 8 of the guidelines states that if a proposal is likely to affect people, certain guidelines should be considered by the proponent in the scoping process.	The EA process should incorporate the aspects outlined in the guidelines.
Namibia Vision 2030	Vision 2030 states that the solitude, silence and natural beauty that many areas in Namibia provide are becoming sought after commodities and must be regarded as valuable natural assets.	Care should be taken that the development does not lead to the degradation of the natural beauty of the area.
Water Act No. 54 of 1956	Section 23(1) deals with the prohibition of pollution of underground and surface water bodies.	The pollution of water resources should be avoided during construction and operation of the development.
The Ministry of Environment and Tourism (MET) Policy on HIV & AIDS	MET has recently developed a policy on HIV and AIDS. In addition, it has also initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.	The proponent and its contractor must adhere to the guidelines provided to manage the aspects of HIV/AIDS. Experience with construction projects has shown that a significant risk is created when migrant construction workers interact with local communities.
Township and Division of Land Ordinance 11 of 1963	The Townships and Division of Land Ordinance regulates subdivisions of portions of land falling within a Local Authority area	In terms of Section 19 such applications are to be submitted to NAMPAB and Townships Board respectively.
Urban and Regional Planning Act 5 of 2018	The Act provides to consolidate the laws relating to urban and regional planning; to provide for a legal framework for spatial planning in Namibia; to provide for principles and standards of spatial planning; to establish the urban and regional planning board; to decentralise certain matters relating to spatial planning; to provide for the preparation,	The subdivision of land and establishment of townships is to be done in accordance with the act.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	<p>approval and review of the national spatial development framework, regional structure plans and urban structure plans; to provide for the preparation, approval, review and amendment of zoning schemes; to provide for the establishment of townships; to provide for the alteration of boundaries of approved townships, to provide for the disestablishment of approved townships; to provide for the change of name of approved townships; to provide for the subdivision and consolidation of land; to provide for the alteration, suspension and deletion of conditions relating to land; and to provide for incidental matters.</p>	
<p>Local Authorities Act No. 23 of 1992</p>	<p>The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.</p>	<p>The development must comply with provisions of the Local Authorities Act.</p>
<p>Labour Act no. 11 of 2007</p>	<p>Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.</p>	<p>Given the employment opportunities presented by the development, compliance with the labour law is essential.</p>
<p>National Heritage Act No. 27 of 2004</p>	<p>The Act is aimed at protecting, conserving and registering places and objects of heritage significance.</p>	<p>All protected heritage resources (e.g. human remains etc.) discovered, need to be reported immediately to the National Heritage Council (NHC) and require a permit from the NHC before they may be relocated.</p>

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Roads Ordinance 17 of 1972	<ul style="list-style-type: none"> <li>• Section 3.1 deals with width of proclaimed roads and road reserve boundaries</li> <li>• Section 27.1 is concerned with the control of traffic on urban trunk and main roads</li> <li>• Section 36.1 regulates rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads</li> <li>• Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads.</li> </ul>	Adhere to all applicable provisions of the Roads Ordinance.
Public and Environmental Health Act of 2015	This Act (GG 5740) provides a framework for a structured uniform public and environmental health system in Namibia. It covers notification, prevention and control of diseases and sexually transmitted infections; maternal, ante-natal and neo-natal care; water and food supplies; infant nutrition; waste management; health nuisances; public and environmental health planning and reporting. It repeals the Public Health Act 36 of 1919 (SA GG 979).	Contractors and users of the proposed development are to comply with these legal requirements.
Nature Conservation Ordinance no. 4 of 1975	Chapter 6 provides for legislation regarding the protection of indigenous plants	Indigenous and protected plants must be managed within the legal confines.
Water Quality Guidelines for Drinking Water and Wastewater Treatment	Details specific quantities in terms of water quality determinants, which wastewater should be treated to before being discharged into the environment	These guidelines are to be applied when dealing with water and waste treatment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Environmental Assessment Policy of Namibia (1995)	The Policy seeks to ensure that the environmental consequences of development projects and policies are considered, understood and incorporated into the planning process, and that the term ENVIRONMENT is broadly interpreted to include biophysical, social, economic, cultural, historical and political components.	This EIA considers this term of Environment.
Water Resources Management Act No. 11 of 2013	Part 12 deals with the control and protection of groundwater  Part 13 deals with water pollution control	The pollution of water resources should be avoided during construction and operation of the development. Should water need to be abstracted, a water abstraction permit will be required from the Ministry of Water, Agriculture and Forestry.
Forest Act 12 of 2001 and Forest Regulations of 2015	To provide for the establishment of a Forestry Council and the appointment of certain officials; to consolidate the laws relating to the management and use of forests and forest produce; to provide for the protection of the environment and the control and management of forest fires; to repeal the Preservation of Bees and Honey Proclamation, 1923 (Proclamation No. 1 of 1923), Preservation of Trees and Forests Ordinance, 1952 (Ordinance No. 37 of 1952) and the Forest Act, 1968 (Act No. 72 of 1968); and to deal with incidental matters.	Protected tree and plant species as per the Forest Act No 12 of 2001 and Forest Regulations of 2015 may not be removed without a permit from the Ministry of Agriculture, Water and Forestry.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Atmospheric Pollution Prevention Ordinance No 45 of 1965	Part II - control of noxious or offensive gases, Part III - atmospheric pollution by smoke, Part IV - dust control, and Part V - air pollution by fumes emitted by vehicles.	The development should consider the provisions outlined in the act. The proponent should apply for an Air Emissions permit from the Ministry of Health and Social Services (if needed).
Hazardous Substance Ordinance 14 of 1974	To provide for the control of substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances; to provide for the division of such substances into groups in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, application, modification, disposal or dumping of such substances; and to provide for matters connected therewith.	The handling, usage and storage of hazardous substances on site should be carefully controlled according to this Ordinance.
Soil Conservation Act No 76 of 1969	Act to consolidate and amend the law relating to the combating and prevention of soil erosion, the conservation, improvement and manner of use of the soil and vegetation and the protection of the water sources	The proposed activity should ensure that soil erosion and soil pollution is avoided during construction and operation.

This EIA process will be undertaken in accordance with the EIA Regulations. A Flow Diagram (refer to **Figure 3** below) provides an outline of the EIA process to be followed.



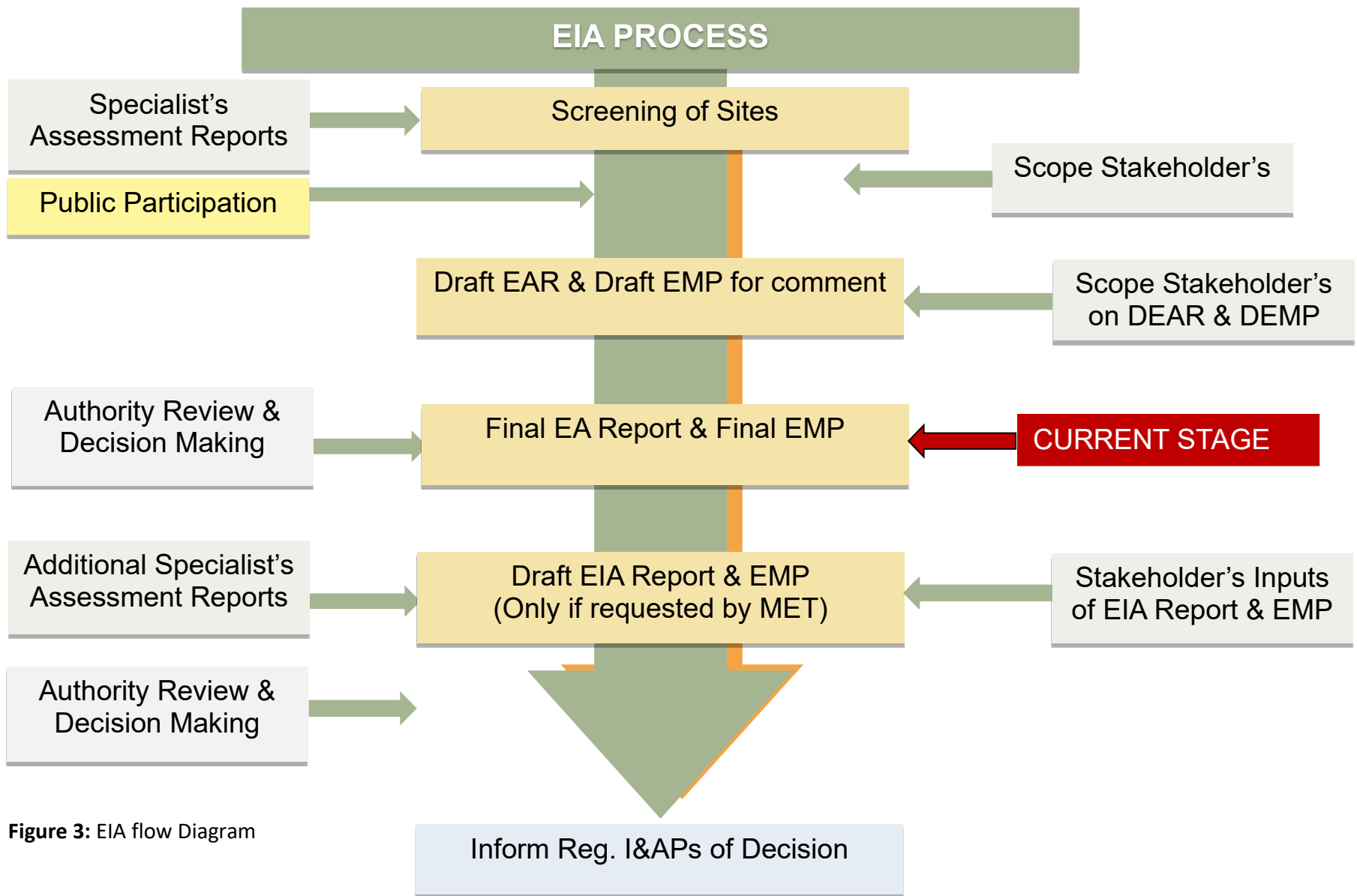


Figure 3: EIA flow Diagram

### 3 ENVIRONMENTAL BASELINE DESCRIPTION

#### 3.1 SOCIAL ENVIRONMENT

##### 3.1.1 Socio-Economic Context

The statistics shown in **Table 4** below are derived from the 2011 Namibia Population and Housing Census (Namibia Statistics Agency, 2011), and presented from a local and regional perspective.

**Table 4:** Statistics of the Katima Mulilo Urban Constituency and Zambezi Region (Namibia Statistics Agency, 2013)

KATIMA MULILO URBAN	
ATTRIBUTE	INDICATOR
Population	28 362
Females	15 319
Males	13 043
Population under 5 years	14%
Population aged 5 to 14 years	23%
Population aged 15 to 59 years	61%
Population aged 60 years and above	2%
Female: male ratio	85:100
Literacy rate of 15 years old and above	90%
People above 15 years who have never attended school	5%
People above 15 years who are currently attending school	21%
People above 15 years who have left school	73%
People aged 15 years and above who belong to the labour force	66%
Population employed	49%
Homemakers	24%
Students	65%
Retired or old age income recipients	11%
Income from pension	3%
Income from business and non-farming activities	28%
Income from farming	2%
Income from cash remittance	8%
Wages and salaries	57%
Main Language	Zambezi Languages-90%
ZAMBEZI REGION	
ATTRIBUTE	INDICATOR
Population	90 569
Population aged 60 years and above	6%
Population aged 5 to 14 years	25%
Population aged 15 to 59 years	55%

### 3.1.2 Archaeological and Heritage Context

Archaeological and heritage sites are not readily documented for the Katima Mulilo area. According to Kinahan (2013) a number of archeological sites have been identified in the Katima Mulilo area through field surveys and assessments. Due to the increased development experienced in the area archeological sites are further identified during surveys conducted for large scale projects, however research in this regard is still in the infant stage and thus there is the risk of sites with cultural significance being damaged or destroyed with development (Kinahan, 2013).

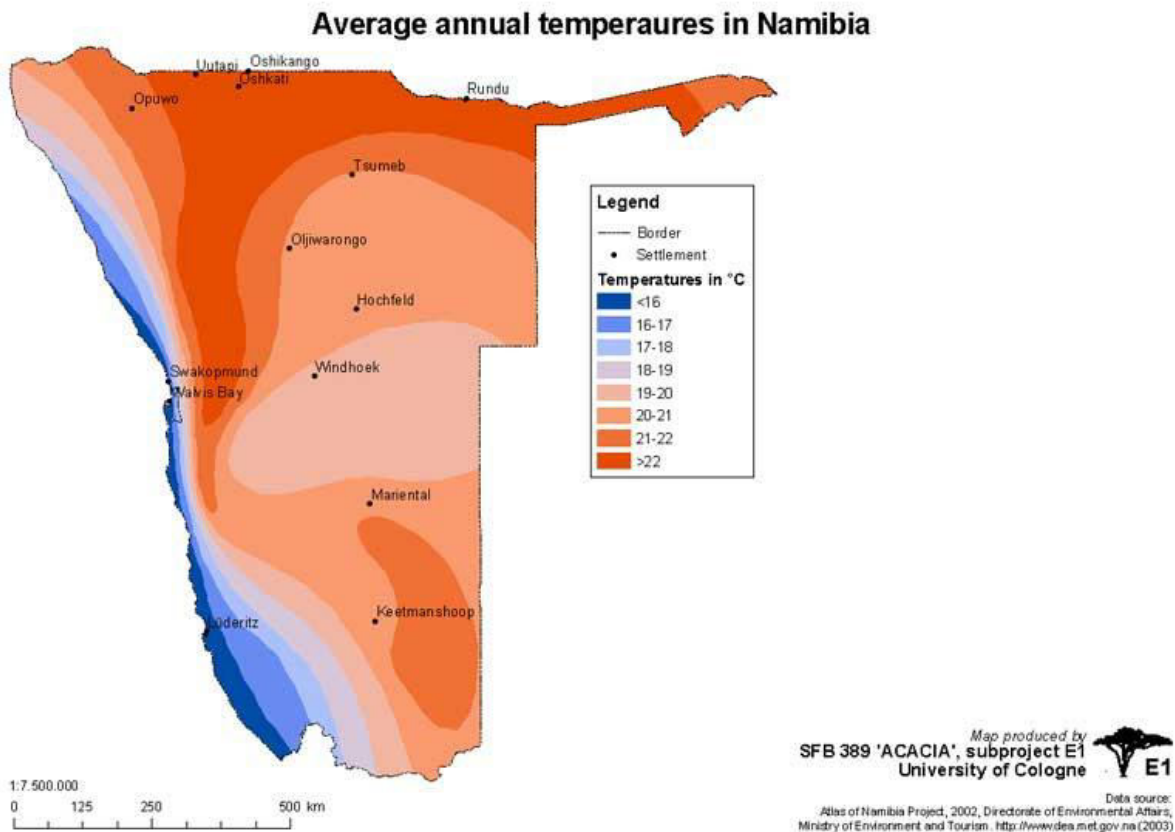
There are a number of monuments within the Zambezi Region which are remnants of the country's colonial past. A building at Luhonono (former Schuckmansburg) still stands, that served as an ammunition storage during the German period. Schuckmansburg served as the administrative centre for the region at that time. From more recently, there is a monument to the Singalamwe massacre, where people were tortured and killed for supporting the freedom struggle. Today there is a graveyard in Masida village for them (Ministry of Lands and Resettlements, 2015).

No archaeological and heritage sites are however known to be located within the proposed development area.

## 3.2 BIO-PHYSICAL ENVIRONMENT

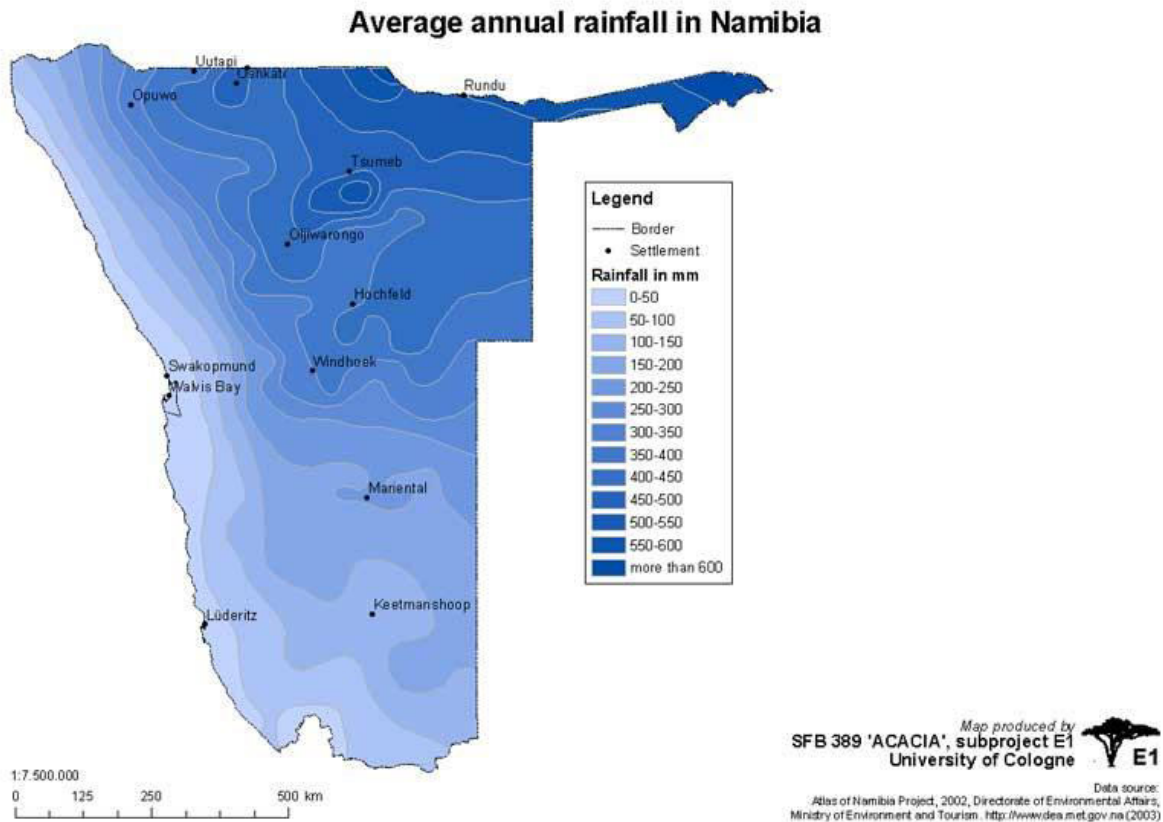
### 3.2.1 Climate

The Zambezi has a tropical climate with higher rainfall, less evaporation and a warmer winter than the rest of the country. The average annual temperature ranges between 21-22°C as indicated in **Figure 4** below. The average maximum temperature for Katima Mulilo below varies between 34 and 36°C with the average minimum temperature between 2 and 4°C.



**Figure 4:** Annual average temperature  
[http://www.unikoeln.de/sfb389/e/e1/download/atlas\\_namibia/e1\\_download\\_climate\\_e.htm#temperature\\_annual](http://www.unikoeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_climate_e.htm#temperature_annual)

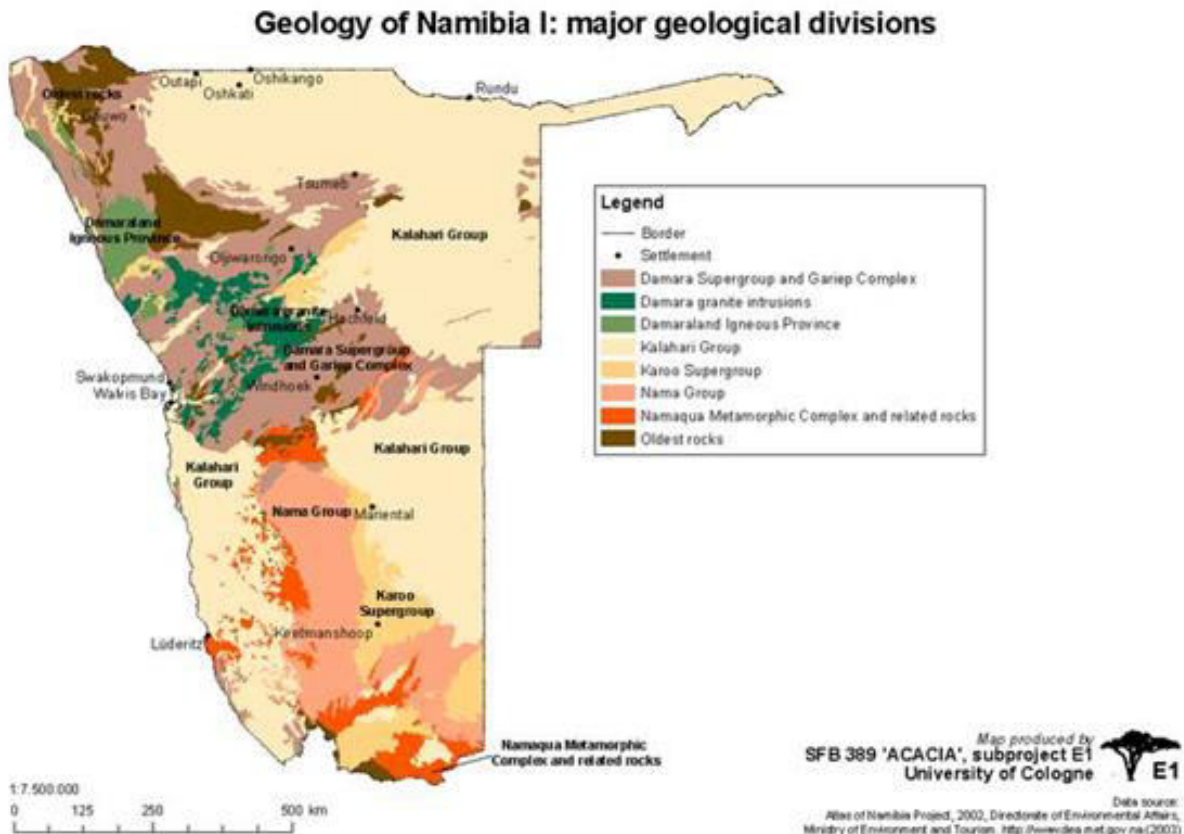
Rainfall is mostly experienced during the summer, with the average annual rainfall being more than 600 mm per year as indicated in **Figure 5** below. Most of the rain in Katima Mulilo is experienced between November and early April.



**Figure 5:** Average annual Rainfall ([http://www.uni-koeln.de/sfb389/e/e1/download/atlas\\_namibia/pics/climate/rainfall-annual.jpg](http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/climate/rainfall-annual.jpg))

### 3.2.2 Topography, Geology and Soils

The Zambezi Region is relatively flat with the highest areas occurring in the western part of the region. The region is covered in thick deposits of Kalahari sand leaving very little underlying geology exposed (Robertson, Jarvis, Mendelsohn, & Swart, 2012). The soils in the region is characterized by the Kalahari Basin, which is dominated by sand dunes. The region is divided into six major land types as depicted in **Figure 6** below. Katima Mulilo falls within the Kalahari Woodland land type indicated as beige in **Figure 6** below.

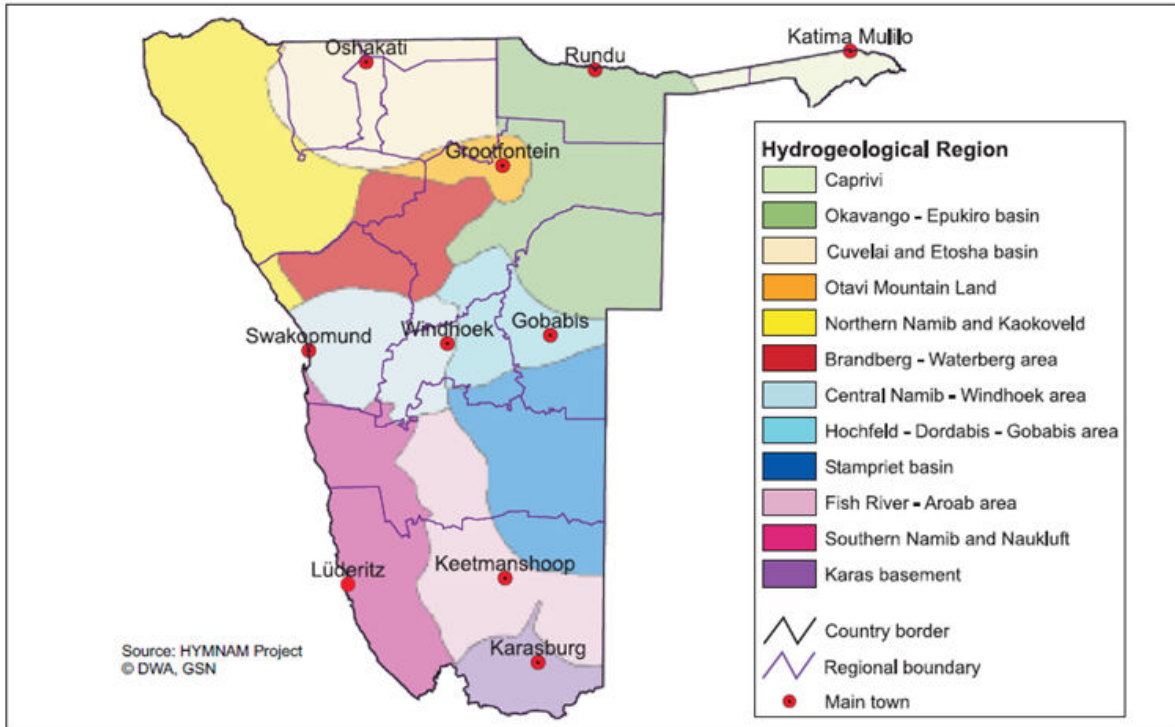


**Figure 6:** Geology of Namibia ([http://www.uni-koeln.de/sfb389/e/e1/download/atlas\\_namibia/pics/physical/geology.jpg](http://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/pics/physical/geology.jpg))

### 3.2.3 Hydrology and Hydrogeology

One of the most important features in the region is the perennial Zambezi River that flows into the Indian Ocean and is shared between eight Southern African countries (Ministry of Agriculture Water and Rural Development, 2011). The region is defined by four perennial rivers: the Zambezi, Kwando, Linyanti and Chobe. Lake Liambezi is an ephemeral lake in the Linyanti-Chobe-Zambezi River system.

Groundwater in the region is considered to be generally good, particularly within 5-20 km from the rivers as they recharge the aquifers (Ministry of Agriculture Water and Rural Development, 2011). Boreholes concentrated along the main roads have been drilled in the region to provide water for people and livestock. Water has additionally been supplied via pipelines due to the varying water quality and unreliable yields.



**Figure 7:** Groundwater basins and hydrogeological regions in Namibia

### 3.3 TERRESTRIAL ECOLOGY

#### 3.3.1 Flora and Fauna

The Zambezi Region falls within the broader Tree-and-Shrub Savanna biome and forms part of the Broadleaved Tree-and -shrub Savanna sub-biome. The Broadleaved Tree-and -shrub Savanna sub-biome is characterized by many species of tall trees which often form thick canopies (Mendelsohn, Jarvis, Roberts & Roberston, 2002). The Zambezi Region can be divided into four vegetation units namely floodplains, mopane woodlands, riverine woodlands and Kalahari woodlands.

## 4 PROJECT DESCRIPTION

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### 4.1 PROJECT COMPONENTS

As previously outlined in Section 1.1, the proposed project involves the following activities:

- **Permanent Closure of Erven 326/Rem and 3888, Katima Mulilo Extension 1 as streets;**
- **Rezoning of Erven 326/Rem and 3888, Katima Mulilo Extension 1 from “Street” to “Undetermined”;**
- **Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space;**
- **Rezoning of Erf 3889, Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”;**
- **Permanent closure of Erven 3950 and 3951, Katima Mulilo Extension 1 as Public Open Spaces;**
- **Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”;**
- **Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”;**
- **Rezoning of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”;**
- **Rezoning of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”;**
- **Consolidation of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1;**
- **Layout Approval and Township Establishment on Erf 5952, Katima Mulilo Extension 1, Comprising of 35 Erven and the Remainder to be known as Katima Mulilo Extension 29.**

These components will be described in further detail below, in terms of their design, layout and footprint.

### 4.2 ALTERNATIVES

As pointed out in Section 1.4 above various layout alternatives were initially considered by the proponent, ultimately resulting in the final layouts.

#### 4.2.1 No – Go Alternative

The no-go alternative is the baseline against which all alternatives are assessed. The no-go alternative would essentially entail maintaining the current situation, whereby the existing land would remain



unformalized and underdeveloped. The proposed township would thus not be developed, and the town would thus not be able to benefit from the proposed development.

### **4.3 THE PROPOSED DEVELOPMENT**

The Katima Mulilo Town Council intends to establish Katima Mulilo Extension 29 which is located on Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947, 3950-3951 and Erf 5952 which are in the neighborhood of Katima Mulilo Extension 1. The area is currently vacant and ideally situated and suited for the proposed township establishment. The proposed layout comprises mostly of General Business zoned erven with Local Authority, Private Open Space, Public Open Space zoned and Street erven.

The Katima Mulilo Development Trust was desirous to amend the planned but undeveloped commercial area within the western side of Katima Mulilo Extension 1 as part of a broader project to improve the surroundings of the central business area with the aim of it becoming the new Central Business District. The layout design that currently exists in the area was deemed not favourable in terms of promoting the development of a modern and timeless state of the art business centre for Katima Mulilo. As such the Council entered into a memorandum of understanding with the Katima Development Trust to re-plan the area in question.

The re-planning that is currently being done in this area:

- (d) Create improved vehicular, pedestrian and bicycle traffic into the new commercial area from the surrounding streets,
- (e) Create a sense of space by introducing landscaped areas and public open spaces within the area to be re-designed,
- (f) Enhance the existing drainage canal, making it the centre piece of a new boulevard

The Zambezi Waterfront area, which is reserved for mainly hospitality use, is located directly to the north of the new CBD site while the existing commercial heart is located generally to the south of the envisaged modern and innovative CBD to be created as result of this re-planning exercise.

This new Central Business District (CBD) of Katima Mulilo is to comprise of the following development components:

- A central tree lined boulevard containing a drainage canal, public open space and a two laned street.
- A central Park (Public Open Space)
- A series of blocks zoned for business use

- Some erven reserved for Private Open Space to accommodate the sports field
- An erf reserved for a taxi rank

The area to be used for the development comprises of approximately 30 hectares, all of which is within Katima Mulilo Extension 1.

In line with the Katima Mulilo Zoning Scheme the zonings of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 are outlined in **Table 5** below.

**Table 5: Erf Summary - Land Use**

<b>Erf</b>	<b>Current Zoning</b>	<b>Erf</b>	<b>Current Zoning</b>
<b>3865</b>	General Residential	3912	General Business
<b>3866</b>	General Residential	3913	General Business
<b>3867</b>	Local Authority	3914	General Business
<b>3870</b>	General Business	3915	General Business
<b>3871</b>	General Business	3916	General Business
<b>3873</b>	General Business	3917	General Business
<b>3874</b>	General Business	3918	General Business
<b>3875</b>	General Business	3919	General Business
<b>3876</b>	General Business	3920	General Business
<b>3877</b>	General Business	3921	General Business
<b>3878</b>	General Business	3922	General Business
<b>3879</b>	General Business	3923	General Business
<b>3880</b>	General Business	3924	General Business
<b>3881</b>	General Business	3925	General Business
<b>3882</b>	General Business	3926	General Business
<b>3888</b>	Street	3927	General Business
<b>3889</b>	Private Open Space	3928	General Business
<b>3891</b>	General Residential	3929	General Business
<b>3892</b>	Local Authority	3930	General Business
<b>3893</b>	General Residential	3931	General Business

<b>Erf</b>	<b>Current Zoning</b>	<b>Erf</b>	<b>Current Zoning</b>
<b>3894</b>	General Residential	3932	General Business
<b>3895</b>	General Business	3933	General Business
<b>3896</b>	General Business	3934	General Business
<b>3897</b>	General Business	3935	General Business
<b>3898</b>	General Business	<b>3936</b>	General Business
<b>3899</b>	General Business	<b>3937</b>	General Business
<b>3900</b>	General Business	<b>3938</b>	General Business
<b>3901</b>	General Business	<b>3939</b>	General Business
<b>3902</b>	General Business	<b>3940</b>	General Business
<b>3903</b>	General Business	<b>3941</b>	General Business
<b>3904</b>	General Business	<b>3942</b>	General Business
<b>3905</b>	General Business	<b>3943</b>	General Business
<b>3906</b>	General Business	<b>3944</b>	General Business
<b>3907</b>	General Business	<b>3945</b>	General Business
<b>3908</b>	General Business	<b>3950</b>	Public Open Space
<b>3909</b>	General Business	<b>3951</b>	Public Open Space
<b>3910</b>	General Business	<b>326/Rem</b>	Street
<b>3911</b>	General Business		

The following town planning steps are required to facilitate the intended development:

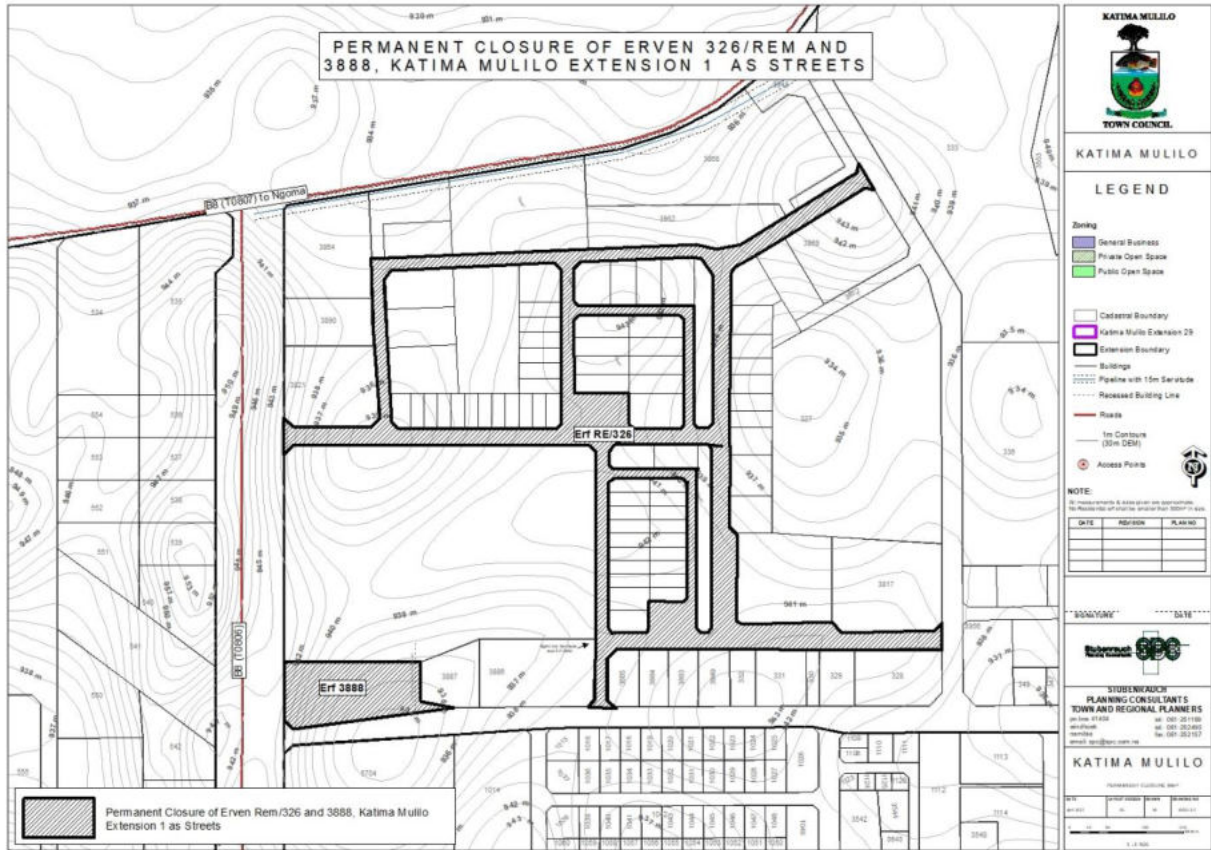
- **Permanent Closure of Erven 326/Rem and 3888, Katima Mulilo Extension 1 as streets;**
- **Rezoning of Erven 326/Rem and 3888, Katima Mulilo Extension 1 from “Street” to “Undetermined”;**
- **Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space;**
- **Rezoning of Erf 3889, Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”;**
- **Permanent closure of Erven 3950 and 3951, Katima Mulilo Extension 1 as Public Open Spaces;**
- **Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”;**
- **Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”;**

- Rezoning of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”;
- Rezoning of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”;
- Consolidation of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1 and
- Layout Approval and Township Establishment on Erf 5952, Katima Mulilo Extension 1, Comprising of 35 Erven and the Remainder to be known as Katima Mulilo Extension 29.

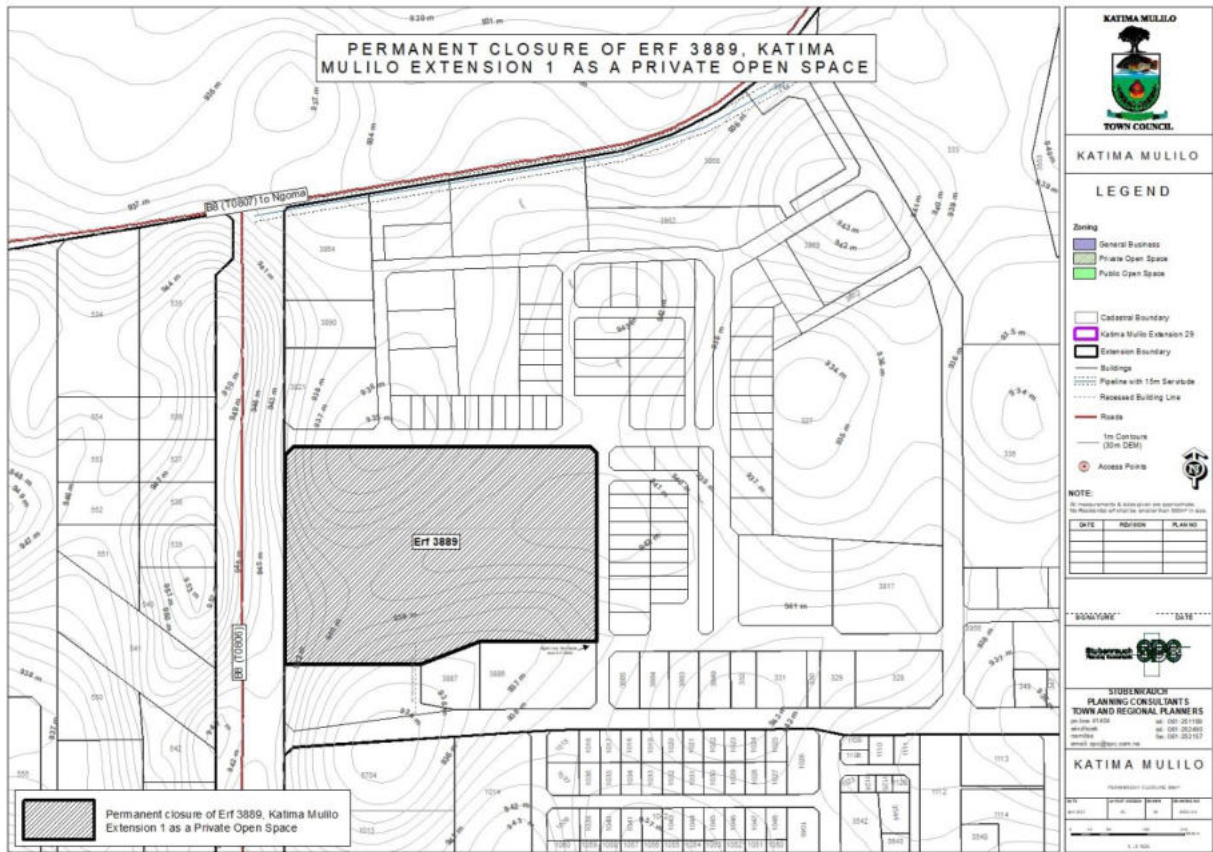
#### **4.3.1 The Permanent Closure**

The permanent closures are as follows and this can be seen in **Figures 8, 9 and 10** below:

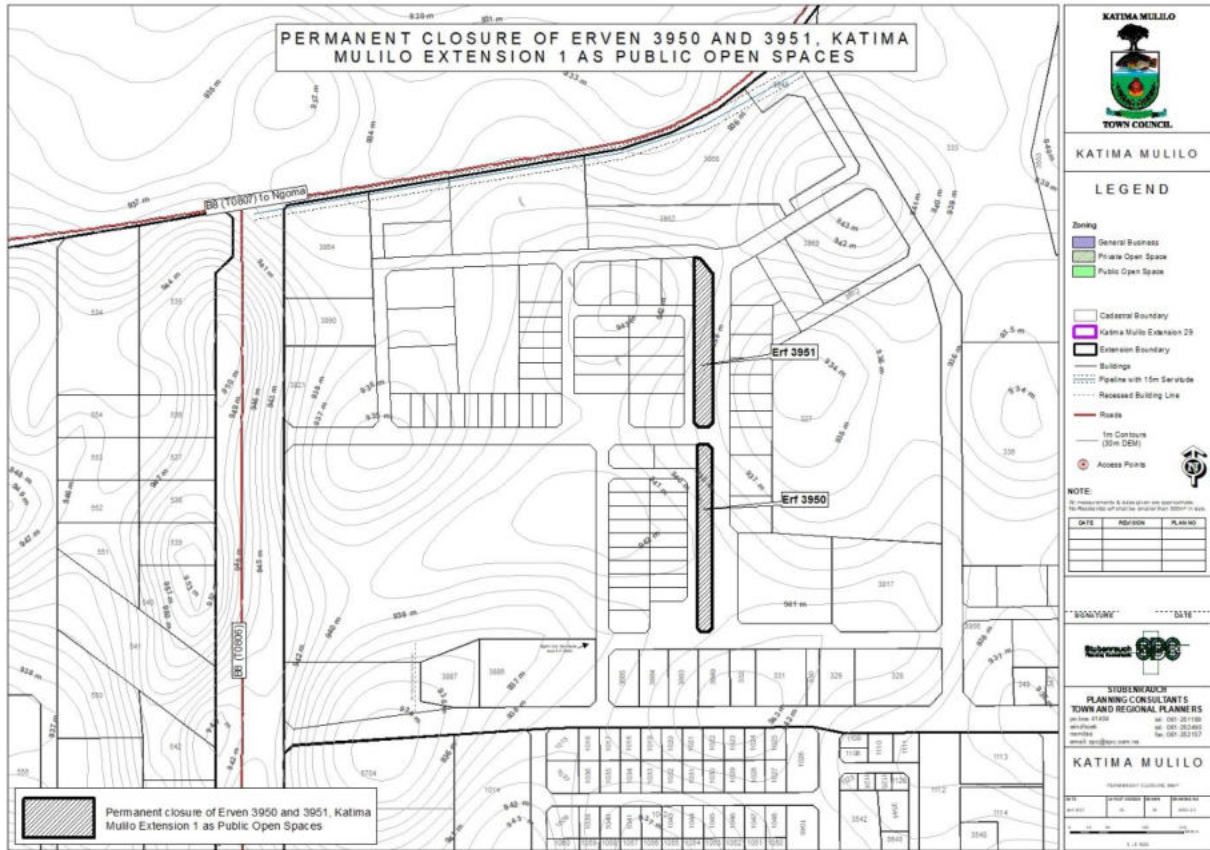
- (a) Permanent Closure of Erven 326/REM and 3888 Katima Mulilo Extension 1 as a street.
- (b) Permanent closure of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space.
- (c) Permanent Closure of Erven 3950 and 3951 Katima Mulilo Extension 1 as a public open space



**Figure 8:** Permanent Closure map of Erven 326/REM and 3888 Katima Mulilo Extension 1 as a street



**Figure 9:** Permanent closure map of Erf 3889, Katima Mulilo Extension 1 as a Private Open Space



**Figure 10:** Permanent Closure map of Erven 3950 and 3951, Katima Mulilo Extension 1 as a Public Open Space

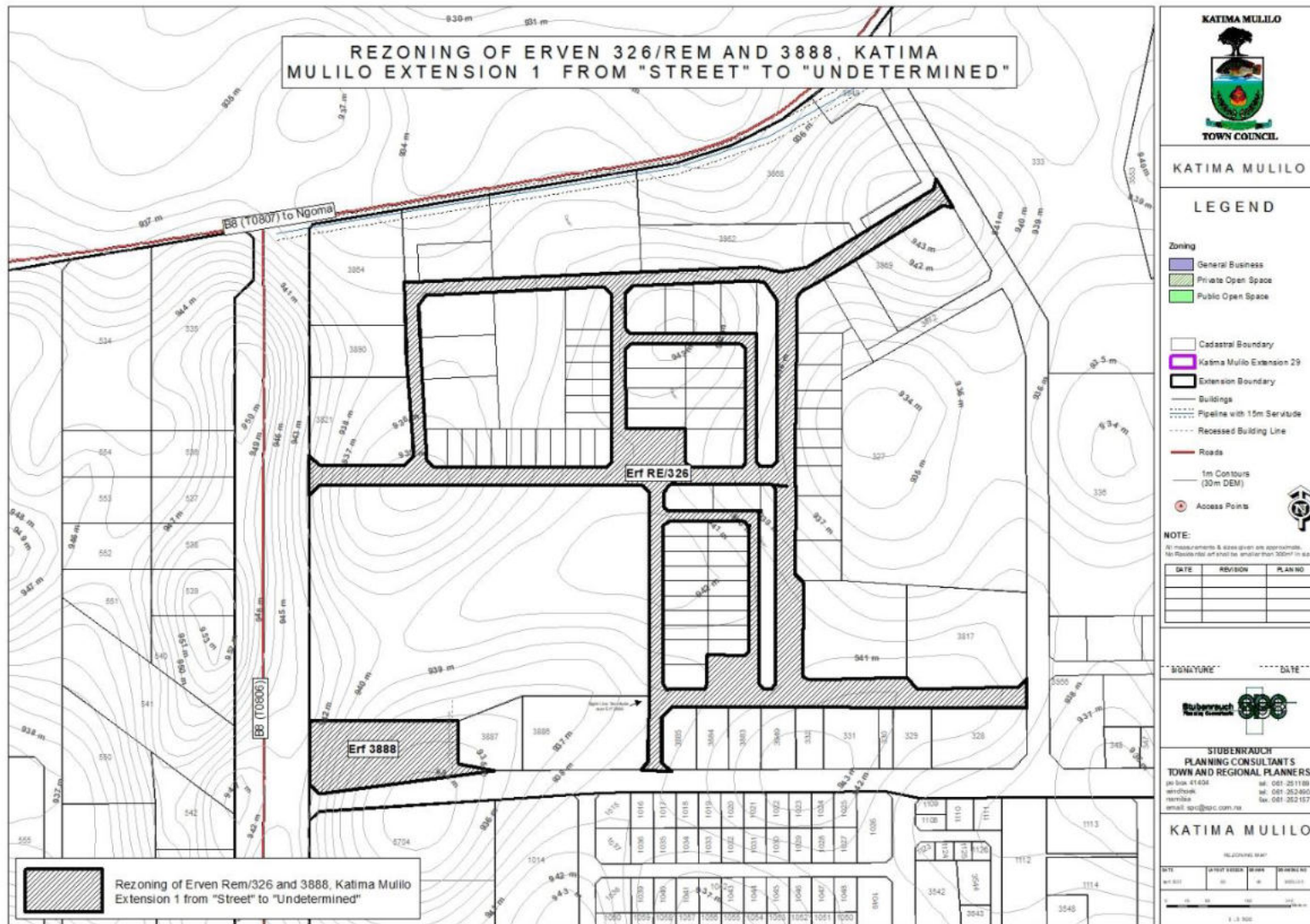
#### 4.3.2 The Rezoning

The rezoning are as follows and this can be seen in **Figures 11- 16** below:

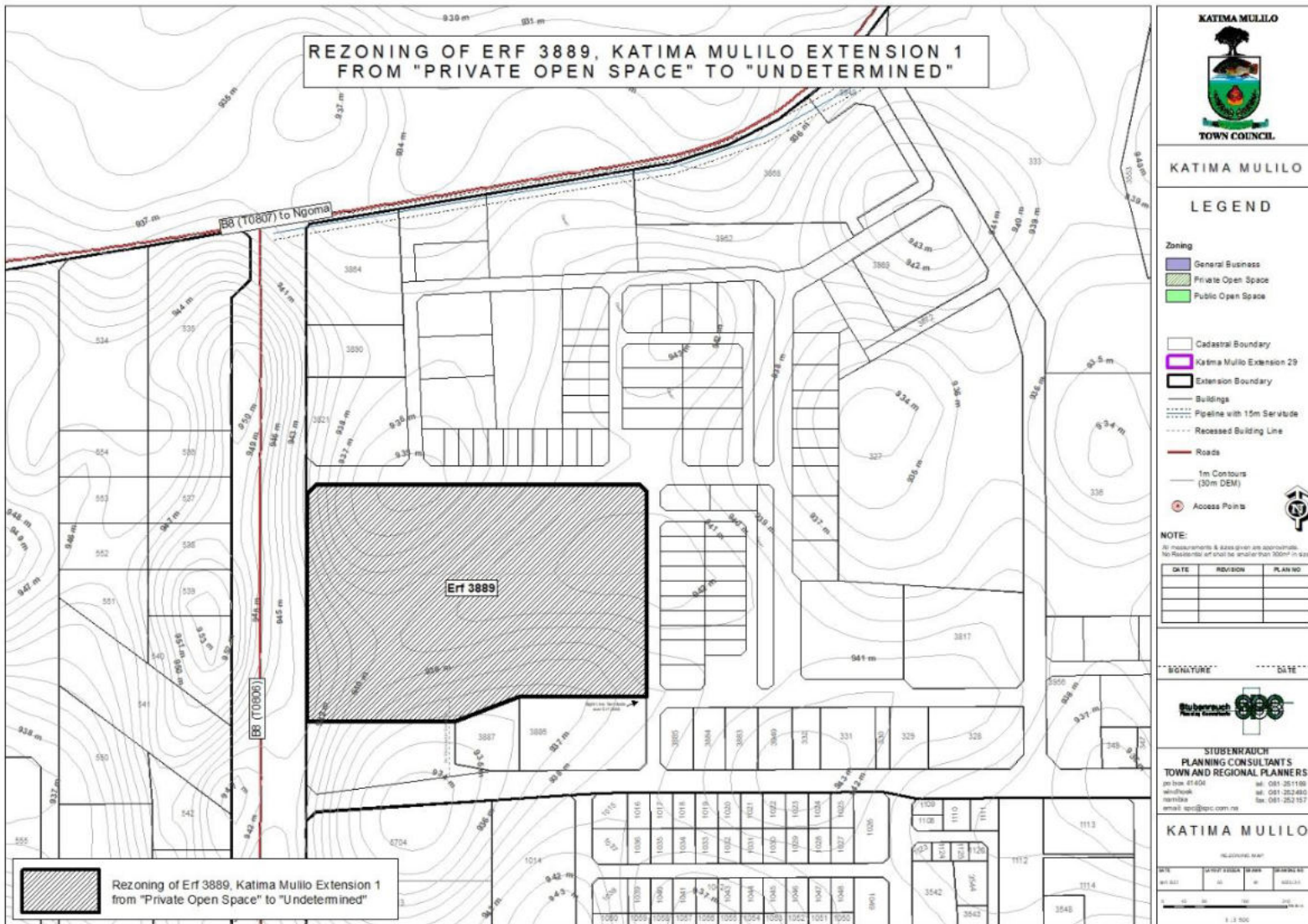
- (a) Rezoning of Erven 326/Rem and 3888 Katima Mulilo Extension 1 “Street” to “Undetermined”.
- (b) Rezoning of Erf 3889 Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”.
- (c) Rezoning of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”.
- (d) Rezoning of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”.
- (e) Rezoning of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”.

(f) Rezoning of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”.

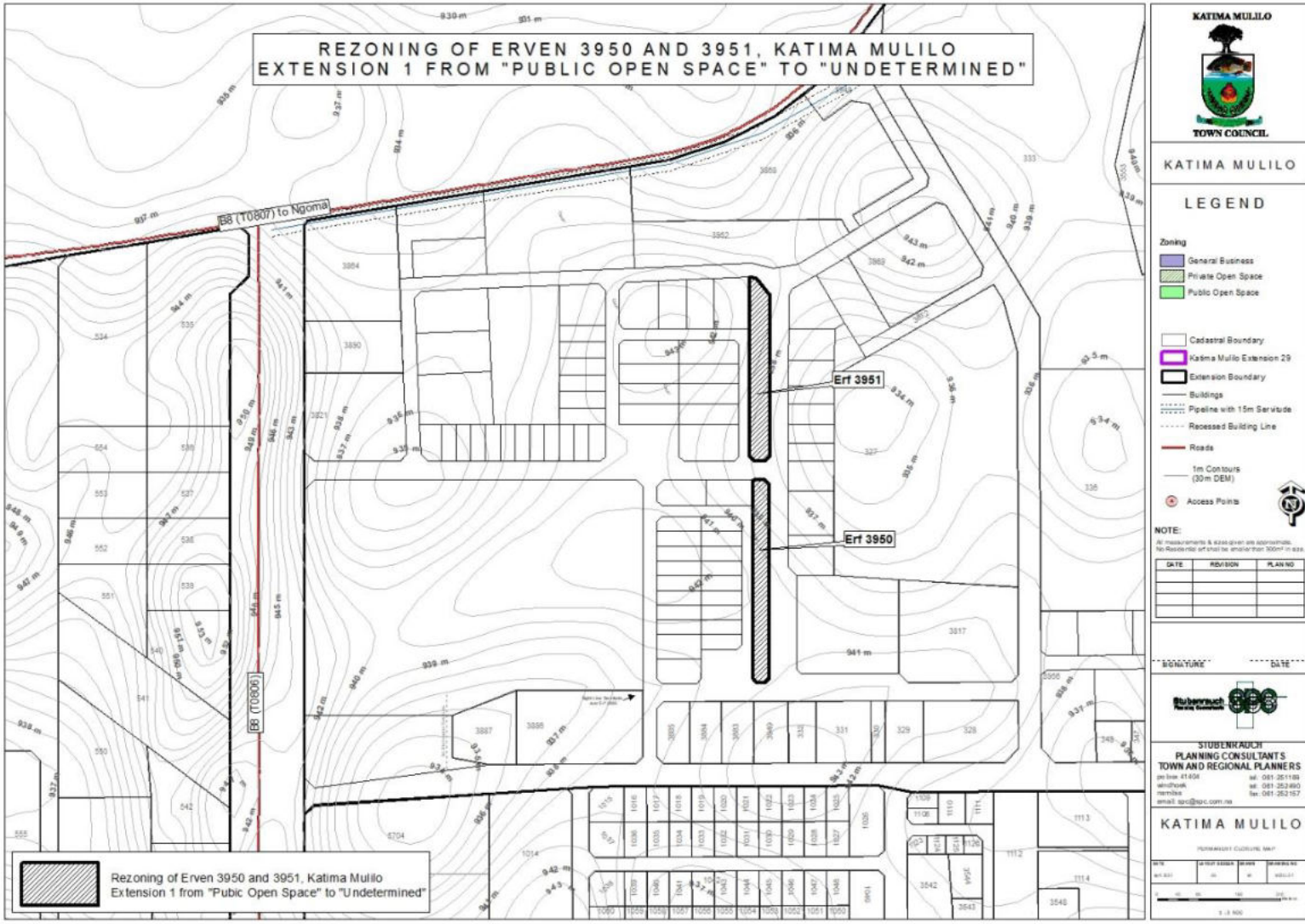




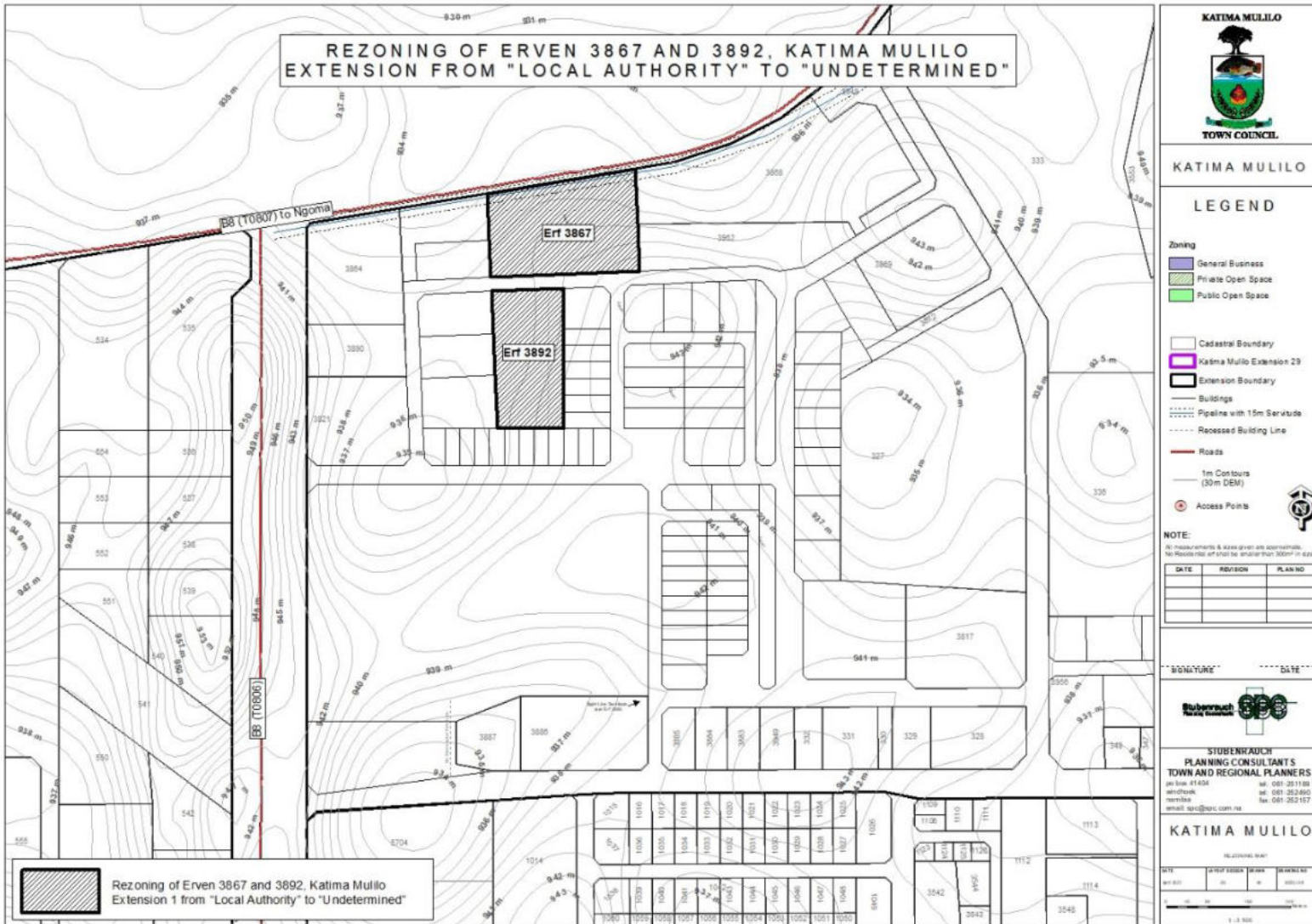
**Figure 11:** Rezoning map of Erven 326/Rem and 3888 Katima Mulilo Extension 1 "Street" to "Undetermined".



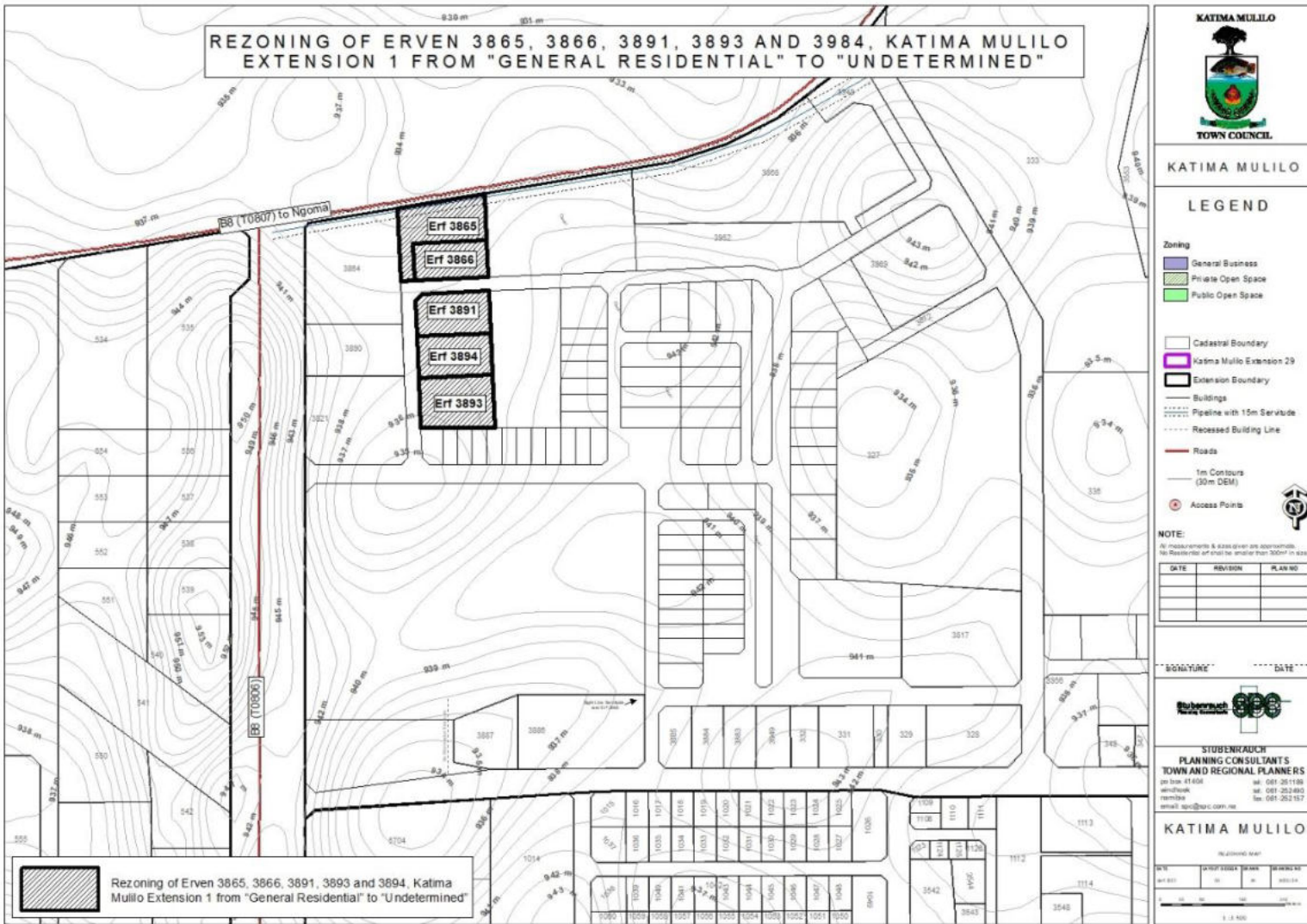
**Figure 12:** Rezoning map of Erf 3889 Katima Mulilo Extension 1 from “Private Open Space” to “Undetermined”



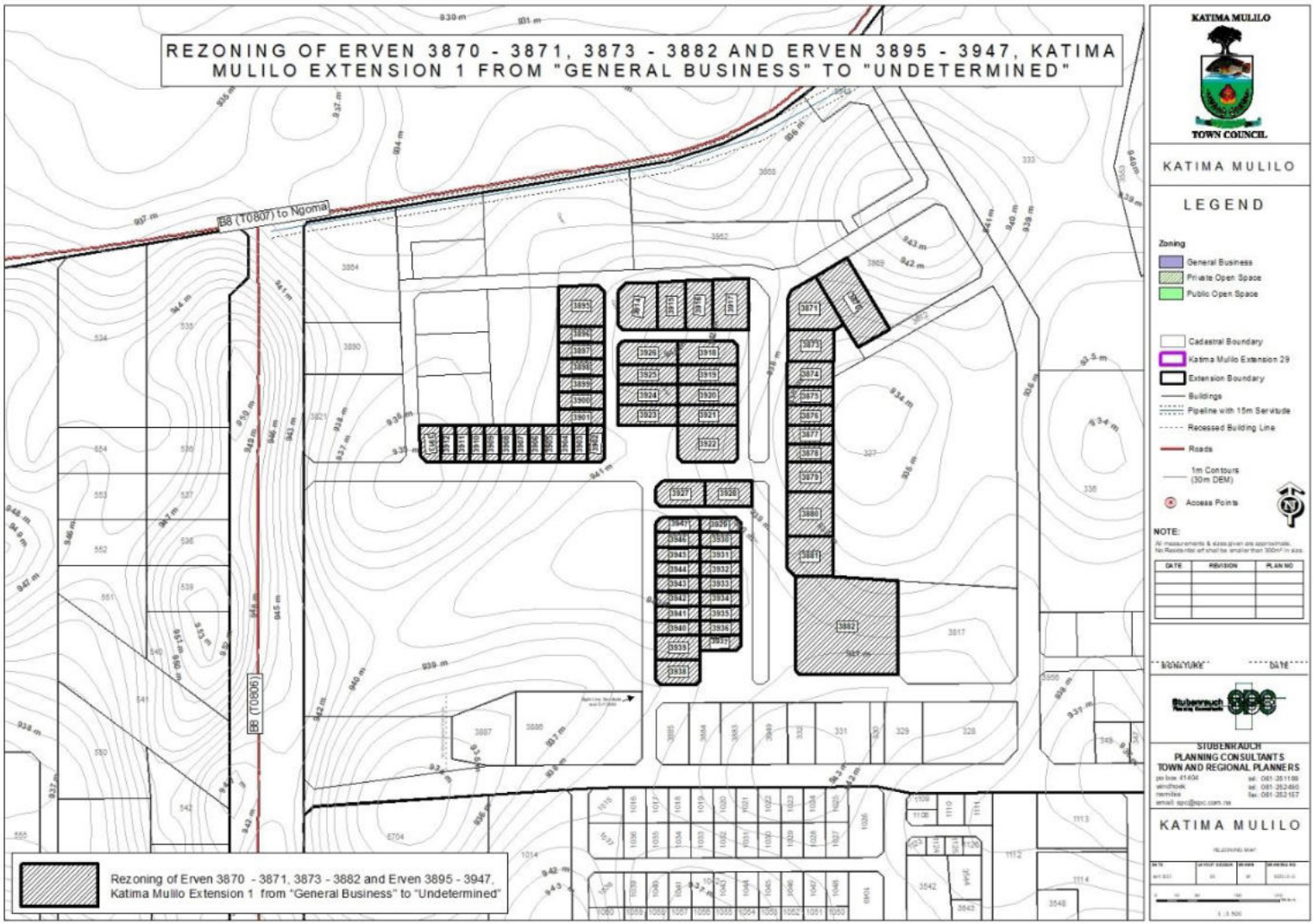
**Figure 13:** Rezoning map of Erven 3950 and 3951, Katima Mulilo Extension 1 from “Public Open Space” to “Undetermined”.



**Figure 14:** Rezoning map of Erven 3867 and 3892, Katima Mulilo Extension 1 from “Local Authority” to “Undetermined”.



**Figure 15:** Rezoning map of Erven 3865, 3866, 3891, 3893 and 3894, Katima Mulilo Extension 1 from “General Residential” to “Undetermined”.



**Figure 16:** Rezoning map of Erven 3870- 3871, 3873 – 3882 and Erven 3895 - 3947, Katima Mulilo Extension 1 from “General Business” to “Undetermined”.

### 4.3.3 The consolidations

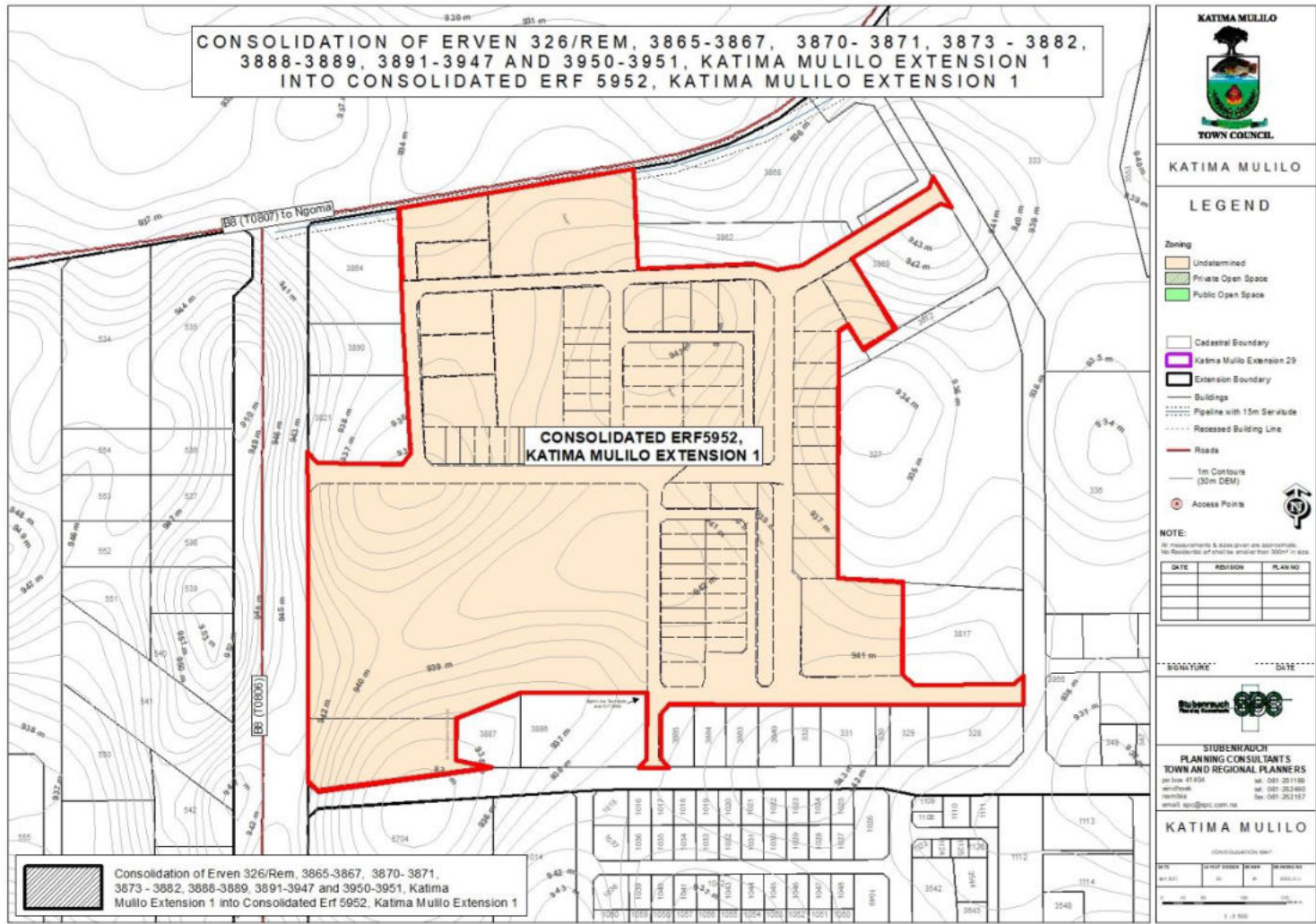
Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1 as depicted on Figure Figure 8 below.

Katima Mulilo Town Council intends to establish a new township on approximately 30 hectares of relatively undeveloped land. As indicated above the area is currently vacant and ideally situated and suited for the township establishment process. The road network is designed to accommodate engineering services and the existing roads while simultaneously permitting easy vehicular traffic and pedestrian movement to take place.

The proposed layout provides for 35 new erven of which most of the erven will be zoned “General Business”. A total of 22 General Business erven have been provided for in the layout. These erven measure approximately 5000m<sup>2</sup>, with the largest erf measuring approximately 15588m<sup>2</sup> and the smallest erf measuring approximately 914m<sup>2</sup>. These erven are the pinnacle of this extension, as the layout design focuses on providing business erven that will create a new CBD, which will breathe life into Katima Mulilo.

The larger General Business erven will be for the development of mini shopping complexes, which will provide various amenities for the residents of Katima Mulilo, including a wide variety of shops and service providers, and these will also come with employment opportunities, as well as investments in the Local Economic Development sector of the town.

The layout has made provision for nine (9) erven that are reserved for Public Open Space purposes. These erven are envisaged to play a crucial role in the urban design and general beautification of the CBD, to make it an area that is more multi-dimensional, in the sense that people can enjoy the shopping facilities in Extension 29, and then go and relax in the parks. The erven reserved for Public Open Space purposes will also improve existing drainage route by upgrading it into a formal canal sitting within an eighteen metre reserve, creating a tree lined boulevard so that the link between the CBD and the Zambezi can be used as a public amenity as well as add to the ambience of the new CBD.



**Figure 17:** Consolidation map of Erven 326/Rem, 3865-3867, 3870- 3871, 3873 - 3882, 3888-3889, 3891-3947 and 3950-3951, Katima Mulilo Extension 1 into Consolidated Erf 5952, Katima Mulilo Extension 1



## Layout design and township establishment

The layout makes provision for three (3) Private Open Space properties, which accommodate the Katima Sports Complex (accommodated on Erf 25), and will also accommodate some private developments of parks and other related activities as defined in the Katima Mulilo Zoning Scheme. Please refer to below **Figure 18 and table 6**.

The site is surrounded on the north and west by the B8 route from which two junctions are formed consisting of slipways to allow traffic movements into and out of the site without disruption to the national road.

The junction to the west of the site is supported by public and private open space either side of it creating a sense of arrival as pedestrians and motorists move through a sequence of spaces leading toward the mini shopping complexes.

By imposing a grid pattern to the road layouts across the site, the grid promotes a formal sense of order to the area promoting its business functions, as well as allowing roads to circulate around the public park (on Erf 34) which forms another focal point in the extension, after the formal boulevard.

**Table 6:** Summary of land uses and Erf sizes for proposed Katima Mulilo Extension 29

Land Use	No of Erven	Area (ha)	Spatial Implication (%)
General Business	22	12.20	40.28
Local Authority	1	1.46	4.81
Private Open Space	2	4.26	14.08
Public Open Space	9	1.95	6.43
Street	1	0.52	1.72
Street	Remainder	9.90	32.68
<b>TOTAL</b>	<b>35 Erven &amp; Remainder</b>	<b>30.29</b>	<b>100.00</b>

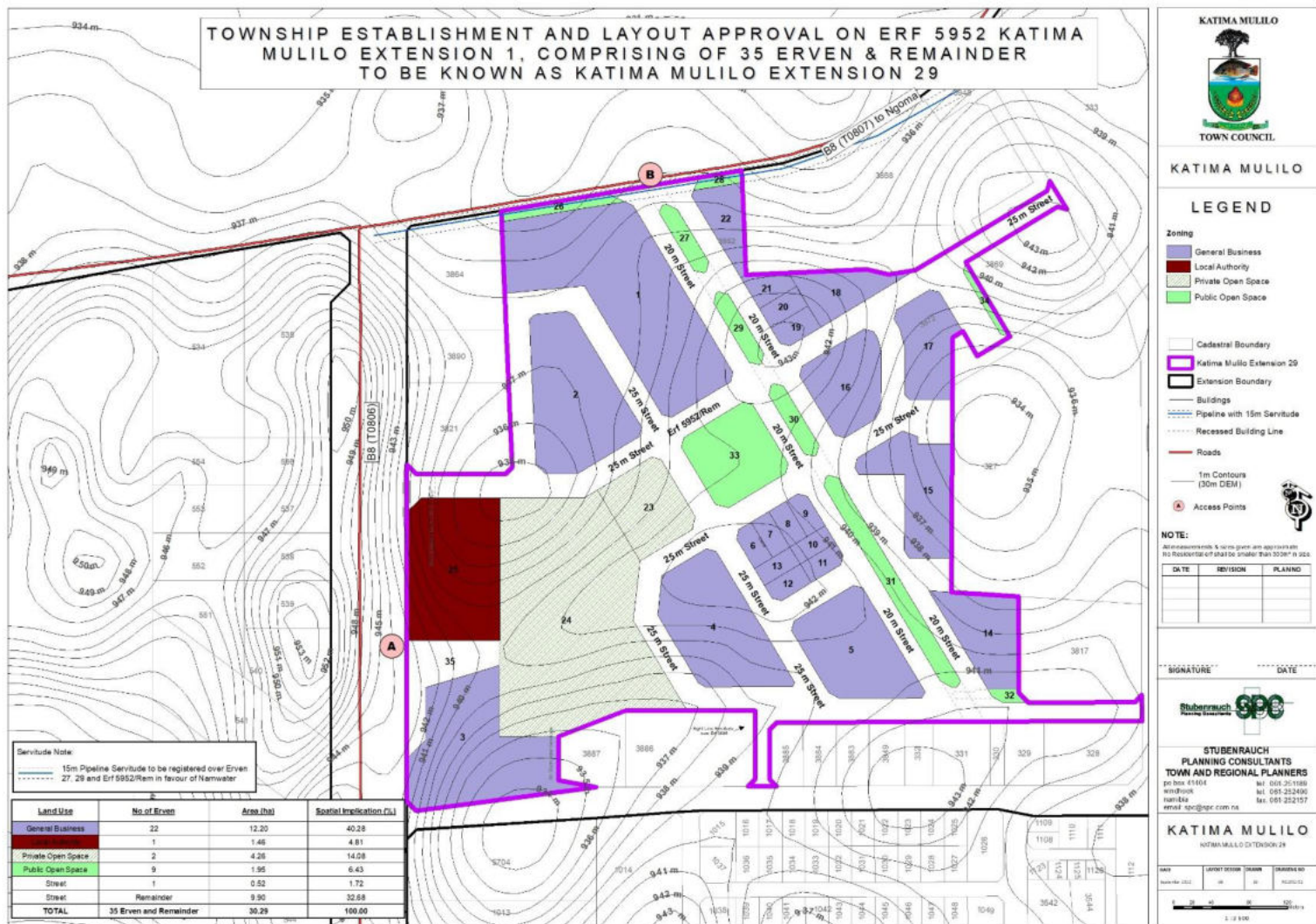


Figure 18: Layout Map for the proposed Katima Mulilo Extension 29



**Figure 19:** Aerial Image of proposed Katima Mulilo Extension 29

#### **4.3.4 Engineering Services and Access Provision**

The Municipality will appoint a consulting engineer who will be responsible for the design and supervision of the installation of the bulk and internal municipal services to be provided. All engineering plans will be submitted with the local authority for approval / endorsement before any construction will commence. The tasks of the engineer will include:

- The design of bulk and internal municipal services
- The upgrading of the existing drainage route (water canal) and storm water related issues (including potential flooding of area)

Roads Authority access approval has been obtained for the new access points in the extension. The erven being created in the extension will obtain access from the internal street layout, as designed for the extension. These streets range in width between 20m – 25m and are designed in a manner that promotes efficient traffic flow within the extension, with a large consideration to the amount of people who will visit these business facilities, as well as delivery vehicles that will frequent the extension.

## 5 PUBLIC PARTICIPATION PROCESS

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### 5.1 PUBLIC PARTICIPATION REQUIREMENTS

In terms of Section 21 of the EIA Regulations a call for open consultation with all I&APs at defined stages of the EIA process is required. This entails participatory consultation with members of the public by providing an opportunity to comment on the proposed project. Public Participation has thus incorporated the requirements of Namibia's legislation, but also takes account of international guidelines, including Southern African Development Community (SADC) guidelines and the Namibian EIA Regulations. Public participation in this project has been undertaken to meet the specific requirements in accordance with the international best practice. Please see **Table 7** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **17 November 2022 to 8 December 2022**.

**Table 7:** Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice/poster in Katima Mulilo	See <b>Annexure A</b>
Placing advertisements in two newspapers namely the Namibian and New Era ( <b>17 November and 24 November 2022</b> )	See <b>Annexure B</b>
Written notice to surrounding property owners and Interested and Affected Parties via Email ( <b>17 November 2022</b> )	See <b>Annexure C</b>
A public meeting held on <b>29 November 2022</b> at 16h00 at Ngweze Community Hall, Katima Mulilo	See <b>Annexure C</b>

The public meeting was attended by the consultants, representatives of the proponent and the affected homestead owners. The Katima Mulilo Town Council provided a background on the need for the proposed planning and Mrs Basson (from SPC) provided input with regards to the planning and environmental impacts of the proposed development. No environmental concerns were raised during the meeting.

#### 5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involved the lodging of the Draft Environmental Scoping Report (DESR) to all registered I&APs for comment. Registered and potential I&APs were informed of the availability of the DESR for public comment via a letter/email dated **27 March 2023**. An Executive Summary of the DESR was included in the letters to the registered I&APs. I&APs had until **4 April 2023** to submit comments or raise any issues or concerns they may have with regard to the proposed project.

## 6 ASSESSMENT METHODOLOGY

*The purpose of this chapter is to describe the assessment methodology utilized in determining the significance of the construction and operational impacts of the proposed project, and where applicable the possible alternatives, on the biophysical and socio-economic environment.*

Assessment of predicted significance of impacts for a proposed development is by its nature, inherently uncertain – environmental assessment is thus an imprecise science. To deal with such uncertainty in a comparable manner, a standardised and internationally recognised methodology has been developed. Such accepted methodology is applied in this study to assess the significance of the potential environmental impacts of the proposed development, outlined as follows in **Table 8**.

**Table 8:** Impact Assessment Criteria

CRITERIA	CATEGORY
<b>Impact</b>	Description of the expected impact
<b>Nature</b> Describe type of effect	<b>Positive:</b> The activity will have a social / economical / environmental benefit. <b>Neutral:</b> The activity will have no effect <b>Negative:</b> The activity will have a social / economical / environmental harmful effect
<b>Extent</b> Describe the scale of the impact	<b>Site Specific:</b> Expanding only as far as the activity itself (onsite) <b>Small:</b> restricted to the site’s immediate environment within 1 km of the site (limited) <b>Medium:</b> Within 5 km of the site (local) <b>Large:</b> Beyond 5 km of the site (regional)
<b>Duration</b> Predicts the lifetime of the impact.	<b>Temporary:</b> < 1 year (not including construction) <b>Short-term:</b> 1 – 5 years <b>Medium term:</b> 5 – 15 years <b>Long-term:</b> >15 years (Impact will stop after the operational or running life of the activity, either due to natural course or by human interference) <b>Permanent:</b> Impact will be where mitigation or moderation by natural course or by human interference will not occur in a particular means or in a particular time period that the impact can be considered temporary
<b>Intensity</b> Describe the magnitude (scale/size) of the Impact	<b>Zero:</b> Social and/or natural functions and/ or processes remain unaltered <b>Very low:</b> Affects the environment in such a way that natural and/or social functions/processes are not affected <b>Low:</b> Natural and/or social functions/processes are slightly altered <b>Medium:</b> Natural and/or social functions/processes are notably altered in a modified way

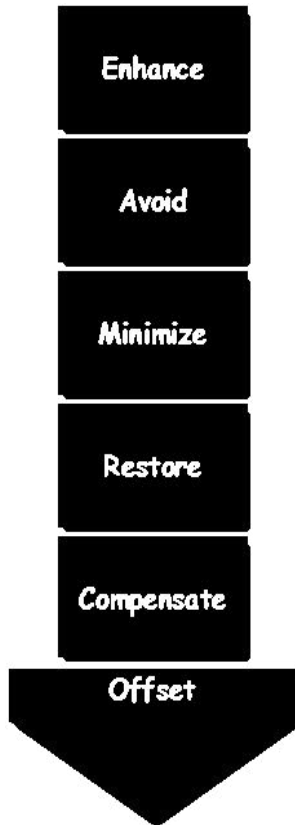
CRITERIA	CATEGORY
	<b>High:</b> Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
<b>Probability of occurrence</b> Describe the probability of the Impact <u>actually</u> occurring	<b>Improbable:</b> Not at all likely <b>Probable:</b> Distinctive possibility <b>Highly probable:</b> Most likely to happen <b>Definite:</b> Impact will occur regardless of any prevention measures
<b>Degree of Confidence in predictions</b> State the degree of confidence in predictions based on availability of information and specialist knowledge	<b>Unsure/Low:</b> Little confidence regarding information available (<40%) <b>Probable/Med:</b> Moderate confidence regarding information available (40-80%) <b>Definite/High:</b> Great confidence regarding information available (>80%)
<b>Significance Rating</b> The impact on each component is determined by a combination of the above criteria.	<b>Neutral:</b> A potential concern which was found to have no impact when evaluated <b>Very low:</b> Impacts will be site specific and temporary with no mitigation necessary. <b>Low:</b> The impacts will have a minor influence on the proposed development and/or environment. These impacts require some thought to adjustment of the project design where achievable, or alternative mitigation measures <b>Medium:</b> Impacts will be experienced in the local and surrounding areas for the life span of the development and may result in long term changes. The impact can be lessened or improved by an amendment in the project design or implementation of effective mitigation measures. <b>High:</b> Impacts have a high magnitude and will be experienced regionally for at least the life span of the development, or will be irreversible. The impacts could have the no-go proposition on portions of the development in spite of any mitigation measures that could be implemented.

\*NOTE: Where applicable, the magnitude of the impact has to be related to the relevant standard (threshold value specified and source referenced). The magnitude of impact is based on specialist knowledge of that particular field.

For each impact, the EXTENT (spatial scale), MAGNITUDE (size or degree scale) and DURATION (time scale) are described. These criteria are used to ascertain the SIGNIFICANCE of the impact, firstly in the case of no mitigation and then with the most effective mitigation measure(s) in place. The decision as to which combination of alternatives and mitigation measures to apply lies with the proponent, and their acceptance and approval ultimately with the relevant environmental authority.

The SIGNIFICANCE of an impact is derived by taking into account the temporal and spatial scales and magnitude. Such significance is also informed by the context of the impact, i.e. the character and identity of the receptor of the impact.

### 6.1 MITIGATION MEASURES



There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 18** below). These cover avoidance, minimization, restoration and compensation. It is possible and considered sought after to enhance the environment by ensuring that positive gains are included in the proposed activity or project. If negative impacts occur then the hierarchy indicates the following steps.

**Impact avoidance:** This step is most effective when applied at an early stage of project planning. It can be achieved by:

- not undertaking certain projects or elements that could result in adverse impacts;
- avoiding areas that are environmentally sensitive; and
- putting in place preventative measures to stop adverse impacts from occurring.

**Impact minimization:** This step is usually taken during impact identification and prediction to limit or reduce the degree, extent, magnitude, or duration of adverse impacts. It can be achieved by:

- scaling down or relocating the proposal;
- redesigning elements of the project; and
- taking supplementary measures to manage the impacts.

**Figure 18:** Mitigation hierarchy

**Restoration:** This step is taken to improve degraded or removed ecosystems following exposure to impacts that cannot be completely avoided or minimised. Restoration tries to return an area to the original ecosystem that occurred before impacts. Restoration is frequently needed towards the end of a project's life-cycle but may be possible in some areas during operation.

**Impact compensation:** This step is usually applied to remedy unavoidable residual adverse impacts. It can be achieved by:

- rehabilitation of the affected site or environment, for example, by habitat enhancement;
- restoration of the affected site or environment to its previous state or better; and



- replacement of the same resource values at another location (off-set), for example, by wetland engineering to provide an equivalent area to that lost to drainage or infill.

## **7 ASSESSMENT OF POTENTIAL IMPACTS AND POSSIBLE MITIGATION MEASURES**

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### ***7.1 INTRODUCTION***

This Chapter describes the potential impacts on the biophysical and socio-economic environments, which may occur due to the proposed activities described in Chapter 4. These include potential impacts, which may arise during the operation of the proposed development (i.e. long-term impacts) as well as the potential construction related impacts (i.e. short to medium term). The assessment of potential impacts will help to inform and confirm the selection of the preferred layouts to be submitted to MEFT: DEAF for consideration. In turn, MEFT: DEAF's decision on the environmental acceptability of the proposed project and the setting of conditions of authorisation (should the project be authorised) will be informed by this chapter, amongst other information, contained in this EA Report.

The baseline and potential impacts that could result from the proposed development are described and assessed with potential mitigation measures recommended. Finally, comment is provided on the potential cumulative impacts which could result should this development, and others like it in the area, be approved.

### ***7.1 PLANNING AND DESIGN PHASE IMPACTS***

#### **7.1.1 Traffic Impacts**

The intended development may have an impact on traffic in the subject area. The traffic is not expected to increase significantly as the erven are located in proximity to an already developed area within the town.

### ***7.2 CONSTRUCTION PHASE IMPACTS ON THE BIOPHYSICAL ENVIRONMENT***

The construction phase impacts are those impacts on the biophysical and socio-economic environment that would occur during the construction phase. These impacts are inherently temporary in duration but may have longer lasting effects.

#### **Flora and Fauna Impacts (Biodiversity)**

There are trees located on the subject erf. The trees located on the subject site should be accommodated in the proposed use for the area. Trees protected under the Forestry Act 12 of 2001 should be protected within the development and may not be removed without a permit from the local Department of Forestry.

It is anticipated that the proposed development area and associated infrastructure (e.g. water, sewage, access route, etc.) would have localised negative implications on the environment and associated fauna and flora should the proposed mitigation measures as outlined in the EMP be enforced.

### **Surface and Ground Water Impacts**

Surface and groundwater impacts may be encountered during the construction and operation phase, especially if development takes place within the rainy season. The risk of contaminating such water sources can be increased by accidental spillage of oils and fuels and any other equipment used during construction. This risk is minimised by the fact that the construction phase will be a short-term activity.

### **Soil Erosion Impacts**

Given the characteristics of the proposed site, soil erosion is likely to be encountered especially if construction will take place during the rainy season.

## ***7.3 CONSTRUCTION PHASE IMPACTS ON THE SOCIO-ECONOMIC ENVIRONMENT***

### **7.3.1 Heritage impacts**

No archaeological and heritage resources are expected to be found on the site. The project management should however be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. Section 3.1.2 provides an overview of the archaeological and heritage context of the town and region.

### **7.3.2 Health, Safety and Security Impacts**

Working conditions on site need to ensure that the health and safety of construction workers are ensured at all times. The use of local labour during construction is strongly encouraged to reduce the need for migrant workforce. Health and Safety requirements need to comply with the Labour Act No. 11 of 2007, local and international health and safety legislation and standards during construction.

### **7.3.3 Traffic Impacts**

Traffic can be expected to increase slightly during the construction phase in areas where construction will take place. A number of trucks and other heavy machinery will be required to deliver, handle and position construction materials as well as to remove spoil material. Not only will the increase in traffic result in associated noise impacts, it will also impact on the roads in the area.

#### **7.3.4 Noise Impacts**

Construction may result in associated noise impacts. These noise impacts will mainly be associated with construction machinery and construction vehicles. The impact is however limited mainly to the construction period only.

#### **7.3.5 Dust and Emission Impacts**

Excavation and stockpiles during the construction phase could result in dust impacts, if not managed correctly. Dust could impact negatively on the health of the nearby community if mitigation measures are not implemented. Dust impacts are primarily associated with the construction phase.

#### **7.3.6 Municipal Services**

The construction phase will result in additional people on-site, who will require provision of the following services:

- Potable water for domestic (ablution and drinking) and construction purposes.
- Temporary toilets during the construction phase.
- Solid waste management (domestic and construction waste).

These services if not managed well are likely to create an opportunity for water wastage; litter; solid and human waste pollution. As such the mitigation measures outlined in the EMP are to be adhered to minimise these impacts.

#### **7.3.7 Storage and Utilisation of Hazardous Substances**

Hazardous substances are regarded by the Hazardous Substance Ordinance (No. 14 of 1974) as those substances which may cause injury or ill-health to or death of human beings by reason of their toxic, corrosive, irritant, strongly sensitizing or flammable nature or the generation of pressure thereby in certain circumstances. During the construction period, the use and storage of these types of hazardous substances, such as shutter oil, curing compounds, types of solvents, primers and adhesives and diesel, on-site could have negative impacts on the surrounding environment if these substances spill and enter the environment.

#### **7.3.8 Waste Impacts**

During construction waste may be generated on site. Waste generated during construction must be disposed of at the nearest approved landfill site.

## **7.4 OPERATIONAL PHASE IMPACTS**

The operational phase impacts are those impacts on the biophysical and socio-economic environment that would occur during the operational phase of the proposed project and are inherently long-term in duration. The impacts of the proposed township once operational mostly include the change in sense of place, impacts of noise, dust and emissions. A general overview of potential impacts will be discussed.

### **7.4.1 Visual Impacts**

Once developed, there will be a change in the visual characteristics of the area. Individuals who frequent the area on a regular or infrequent basis will experience a change in their sense of place of the area. The extent of this disturbance will depend on how highly they valued the initial aesthetic quality of the area. This impact would mostly affect the surrounding property owners within the neighbourhood and the people who frequently visit the area.

### **7.4.2 Noise Impacts**

The operational activities may result in associated noise impacts, depending on the exact type of activities taking place on the properties. However due to the nature of the land uses proposed for the subject even it is not expected that the noise levels will be significant if managed well.

### **7.4.3 Emission Impacts**

The air quality in the area is considered to be fairly good. Additional emissions are not expected due to the land uses that are intended for the site.

### **7.4.4 Social Impacts**

From a social perspective, the proposed township will offer residents an opportunity to acquire business property. Furthermore, during construction temporary jobs may be created for the construction phase of the development. This impact is expected to be positive and medium in significance.

## **7.5 CUMULATIVE IMPACTS**

The cumulative impact of the proposed developments in regard to the degradation of the project area is very difficult to rate. If all proposed mitigation measures are however in place to minimise the overall impacts, then the cumulative impact can be expected to be rated as **Medium-Low (negative)** for the proposed developments.

### **7.1 ENVIRONMENTAL MANAGEMENT PLAN**

An Environmental Management Plan (EMP) is contained in **Annexure E** of this report. The purpose of the EMP is to outline the type and range of mitigation measures that should be implemented during the construction and decommissioning phases of the project to ensure that negative impacts associated with the development are avoided or mitigated.

### **7.2 SUMMARY OF POTENTIAL IMPACTS**

A summary of all the potential impacts from the proposed project assessed above is included in **Table 9**. The **Tables 10 – 12** provide a summary of the mitigation measures proposed for the impacts. While some difference in magnitude of the potential impacts would result from the proposed alternatives this difference was not considered to be significant for any of the potential impacts. As such, the table below applies to all proposed alternatives.

**Table 9:** Summary of the significance of the potential impacts

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
<b>PLANNING AND DESIGN PHASE</b>										
<b>1. Traffic Impacts</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium-Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>CONSTRUCTION PHASE</b>										
<b>1. Biodiversity (Fauna and Flora)</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium-Low	Short term	Low	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>2. Surface &amp; ground water</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Low	Short term	Medium - low	Probable	Certain	Reversible	Medium - Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
<b>3. Soil erosion</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Short term	Medium – low	Probable	Certain	Reversible	Medium – low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>4. Heritage</b>	Katima Mulilo Extension 29	No mitigation	Local	Very low	Short term	Very low	Probable	Certain	Irreversible	Very low(-ve)
		Mitigation	Local	Negligible	Short term	Negligible	Probable	Certain	Irreversible	Negligible (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>5. Health, safety and security</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium-Low	Short term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>6. Traffic impacts</b>	Katima Mulilo Extension 29	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low



Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>7. Noise impacts</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Short term	Medium - low	Probable	Certain	Reversible	Medium - Low (-ve)
		Mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>8. Emissions impacts</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Short term	Low	Probable	Certain	Reversible	Medium - Low (-ve)
		Mitigation	Local	Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>9. Municipal services</b>	Katima Mulilo Extension 29	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Very low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
<b>10. Waste</b>	Katima Mulilo Extension 29	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>11. Hazardous Substances</b>	Katima Mulilo Extension 29	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Very low	Short term	Low	Probable	Certain	Reversible	Very low (-ve)
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
<b>OPERATIONAL PHASE</b>										
<b>1. Visual &amp; sense of place</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
<b>2. Noise</b>		No mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	Significance	Probability	Confidence	Reversibility	Cumulative impact
	Katima Mulilo Extension 29	Mitigation	Local	Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
<b>3. Emissions</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium-Low	Medium term	Low	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Low	Medium term	Very Low	Probable	Certain	Reversible	Very Low (-ve)
	No go	No mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Medium term	Neutral	Probable	Certain	Reversible	Neutral
<b>4. Social impact</b>	Katima Mulilo Extension 29	No mitigation	Local	Medium	Long term	Medium (+)	Probable	Probable	Reversible	Medium (+)
		Mitigation	Local	Medium	Long term	Medium (+)	Probable	Probable	Reversible	Medium (+)
	No go	No mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral
		Mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral

**Table 10:** Proposed mitigation measures for the planning and design phase

PLANNING AND DESIGN PHASE IMPACTS	
Impact	Mitigation Measures
Traffic	<ul style="list-style-type: none"> <li>• Ensure that road junctions have good sightlines.</li> <li>• Provide formal road crossings at relevant areas.</li> <li>• Provide for speed reducing interventions such as speed bumps at relevant road sections.</li> </ul>

**Table 11:** Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	Mitigation Measures
Flora and Fauna	<ul style="list-style-type: none"> <li>• Prevent the destruction of protected and endemic plant species.</li> <li>• Prevent contractors from collecting wood, veld food, etc. during the construction phase.</li> <li>• Do not clear cut the entire development site, but rather keep the few individual trees/shrubs not directly affecting the developments as part of the landscaping.</li> <li>• The plants that are to be kept should be clearly marked with “danger tape” to prevent accidental removal.</li> <li>• Regular inspection of the marking tool should be carried out.</li> <li>• The very important plants should be “camped off” to prevent the unintended removal or damage to these trees.</li> <li>• Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species.</li> <li>• Transplant removed plants where possible, or plant new plants in lieu of those that have been removed.</li> <li>• Prevent the introduction of potentially invasive alien ornamental plant species such as; <i>Lantana</i>, <i>Opuntia</i>, <i>Prosopis</i>, <i>Tecoma</i>, etc.; as part of the landscaping as these species could infest the area further over time.</li> </ul>
Surface and Ground Water Impacts	<ul style="list-style-type: none"> <li>• No dumping of waste products of any kind in or in close proximity to surface water bodies.</li> <li>• Heavy construction vehicles should be kept out of any surface water bodies and the movement of construction vehicles should be limited where possible to the existing roads and tracks.</li> <li>• Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with.</li> </ul>

<b>CONSTRUCTION PHASE IMPACTS</b>	
<b>Impact</b>	<b>Mitigation Measures</b>
	<ul style="list-style-type: none"> <li>• Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles.</li> <li>• Contaminated runoff from the construction sites should be prevented from entering the surface and ground water bodies.</li> <li>• All materials on the construction site should be properly stored.</li> <li>• Disposal of waste from the sites should be properly managed and taken to the designated landfill site.</li> <li>• Construction workers should be given ablution facilities at the construction sites that are located at least <b>30 m</b> away from any surface water and regularly serviced.</li> <li>• 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.</li> </ul>
<b>Soil Erosion</b>	<ul style="list-style-type: none"> <li>• Appropriate erosion control structures must be put in place where soil may be prone to erosion.</li> <li>• Checks must be carried out at regular intervals to identify areas where erosion is occurring.</li> <li>• Appropriate remedial actions are to be undertaken wherever erosion is evident.</li> </ul>
<b>Heritage</b>	<ul style="list-style-type: none"> <li>• The project management should be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds.</li> <li>• In the event of such finds, construction must stop, and the project management or contractors should notify the National Heritage Council of Namibia immediately.</li> </ul>
<b>Health, Safety and Security</b>	<ul style="list-style-type: none"> <li>• Construction personnel should not overnight at the site, except the security personnel.</li> <li>• Ensure that all construction personnel are properly trained depending on the nature of their work.</li> <li>• Provide for a first aid kit and a properly trained person to apply first aid when necessary.</li> <li>• A wellness program should be initiated to raise awareness on health issues, especially the impact of sexually transmitted diseases as described above.</li> <li>• Provide free condoms in the workplace and to local community throughout the construction period and promote their usage.</li> <li>• Facilitate access to Antiretroviral (ARV) medication.</li> </ul>

<b>CONSTRUCTION PHASE IMPACTS</b>	
<b>Impact</b>	<b>Mitigation Measures</b>
	<ul style="list-style-type: none"> <li>• Encourage HIV counselling and testing.</li> <li>• Encourage Voluntary Medical Male Circumcision (VMMC).</li> <li>• Provide awareness on the prevention of mother to child HIV Transmission.</li> <li>• Restrict unauthorised access to the site and implement access control measures.</li> <li>• Clearly demarcate the construction site boundaries along with signage of “no unauthorised access”.</li> <li>• Clearly demarcate dangerous areas and no-go areas on site.</li> <li>• Staff and visitors to the site must be fully aware of all health and safety measures and emergency procedures.</li> <li>• The contractor must comply with all applicable occupational health and safety requirements.</li> <li>• The workforce should be provided with all necessary Personal Protective Equipment where appropriate.</li> </ul>
<b>Traffic</b>	<ul style="list-style-type: none"> <li>• Limit and control the number of access points to the site.</li> <li>• Ensure that road junctions have good sightlines.</li> <li>• Construction vehicles’ need to be in a road worthy condition and maintained throughout the construction phase.</li> <li>• Transport the materials in the least number of trips as possible.</li> <li>• Adhere to the speed limit.</li> <li>• Implement traffic control measures where necessary.</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>• No amplified music should be allowed on site.</li> <li>• Inform immediate neighbours of construction activities to commence and provide for continuous communication between the neighbours and contractor.</li> <li>• Limit construction times to acceptable daylight hours.</li> <li>• Install technology such as silencers on construction machinery.</li> <li>• Do not allow the use of horns as a general communication tool but use it only where necessary as a safety measure.</li> </ul>

<b>CONSTRUCTION PHASE IMPACTS</b>	
<b>Impact</b>	<b>Mitigation Measures</b>
<b>Dust and Emission</b>	<ul style="list-style-type: none"> <li>• It is recommended that dust suppressants such as Dustex be applied to all the construction clearing activities to ensure at least 50% control efficiency on all the unpaved roads and reduce water usage.</li> <li>• Construction vehicles to only use designated roads.</li> <li>• During high wind conditions the contractor must make the decision to cease works until the wind has calmed down.</li> <li>• Cover any stockpiles with plastic to minimise windblown dust.</li> <li>• Provide workers with dust masks.</li> </ul>
<b>Waste</b>	<ul style="list-style-type: none"> <li>• It is recommended that waste from the temporary toilets be disposed of at an approved Wastewater Treatment Works.</li> <li>• A sufficient number of waste bins should be placed around the site for the soft refuse.</li> <li>• A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site.</li> <li>• Solid waste will be collected and disposed of at an appropriate local land fill or an alternative approved site, in consultation with the local authority.</li> </ul>
<b>Hazardous Substances</b>	<ul style="list-style-type: none"> <li>• Storage of the hazardous substances in a bunded area, with a volume of 120 % of the largest single storage container or 25 % of the total storage containers whichever is greater.</li> <li>• Refuel vehicles in designated areas that have a protective surface covering and utilise drip trays for stationary plant.</li> </ul>

**Table 12:** Proposed mitigation measures for the operational phase

<b>OPERATIONAL PHASE IMPACTS</b>	
<b>Impact</b>	<b>Mitigation Measures</b>
<b>Visual and Sense of Place</b>	<ul style="list-style-type: none"> <li>• It is recommended that more 'green' technologies be implemented within the architectural designs and building materials of the development where possible in order to minimise the visual prominence of such a development within the more natural surrounding landscape.</li> </ul>

<b>OPERATIONAL PHASE IMPACTS</b>	
<b>Impact</b>	<b>Mitigation Measures</b>
	<ul style="list-style-type: none"> <li>• Natural colours and building materials such as wood and stone should be incorporated as well as the use of indigenous vegetation in order to help beautify the development.</li> <li>• Visual pollutants can further be prevented through mitigations (i.e. keep existing trees, introduce tall indigenous trees; keep structures unpainted and minimising large advertising billboards).</li> </ul>
<b>Noise</b>	<ul style="list-style-type: none"> <li>• Do not allow commercial activities that generate excessive noise levels.</li> <li>• Continuous monitoring of noise levels should be conducted to make sure the noise levels does not exceed acceptable limits.</li> <li>• No activity having a potential noise impact should be allowed after 18:00 hours if possible.</li> </ul>
<b>Emissions</b>	<ul style="list-style-type: none"> <li>• Consider tarring of the internal road network.</li> <li>• Manage activities that generate emissions.</li> </ul>
<b>Social Impacts</b>	No specific mitigation measures are required, only that the local community be consulted in terms of possible job creation opportunities and must be given first priority if unspecialised job vacancies are available.



## 8 CONCLUSION

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*The purpose of this Chapter is to briefly summarise and conclude the FESR and describe the way forward.*

### **8.1 CONSTRUCTION PHASE IMPACTS**

With reference to **Table 9**, none of the negative construction phase impacts were deemed to have a high significance impact on the environment. The construction impacts were assessed to a **Medium to Low (negative)** significance, without mitigation measures. With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction phase impacts is likely to be reduced to a **Low (negative)**.

### **8.2 OPERATIONAL PHASE**

The most significant **Medium (positive)** impact is the social impact directly associated with the intended development of the township which aims to offer business even opportunities for the residents in Katima Mulilo.

### **8.3 LEVEL OF CONFIDENCE IN ASSESSMENT**

With reference to the information available at the project planning cycle, the confidence in the environmental assessment undertaken is regarded as being acceptable for the decision-making, specifically in terms of the environmental impacts and risks. The Environmental Assessment Practitioner believes that the information contained within this FESR is adequate to allow MEFT: DEAF to be able to determine the environmental acceptability of the proposed project.

It is acknowledged that the project details will evolve during the detailed design and construction phases. However, these are unlikely to change the overall environmental acceptability of the proposed project and any significant deviation from what was assessed in this FESR should be subject to further assessment. If this was to occur, an amendment to the Environmental Authorisation may be required in which case the prescribed process would be followed.

### **8.4 MITIGATION MEASURES**

With the implementation of the recommended mitigation measures in Chapter 7 as well as in the EMP, the significance of the construction and operational phase impacts is likely to be reduced to a **Low (negative)**. **It is further extremely important to include an Environmental Control Officer (ECO) on site during the construction phase of the proposed project to ensure that all the mitigation measures discussed in this report and the EMP are enforced.**

It is noted that where appropriate, these mitigation measures and any others identified by MEFT: DEAF could be enforced as Conditions of Approval in the Environmental Authorisation, should MEFT: DEAF issue a positive Environmental Authorisation.

### **8.5 OPINION WITH RESPECT TO THE ENVIRONMENTAL AUTHORISATION**

Regulation 15(j) of the EMA, requires *that the EAP include an opinion as to whether the listed activity must be authorised and if the opinion is that it must be authorised, any condition that must be made in respect of that authorisation.*

It is recommended that this project be authorised because should the development not proceed the subject area will remain vacant and undeveloped. Potential job opportunities may be available to the local people of Katima Mulilo during construction. The significance of the social impact was therefore deemed to be **Medium (positive)**.

The “no go” alternative was thus deemed to have a **High (negative)** impact, as all the benefits resulting from the development would not be realised.

The significance of negative impacts can be reduced with effective and appropriate mitigation provided in this report and the EMP. If authorised, the implementation of an EMP should be included as a condition of approval.

### **8.6 WAY FORWARD**

The FESR is herewith submitted to MEFT: DEAF for consideration and decision making. If MEFT: DEAF approves, or requests additional information / studies all registered I&APs and stakeholders will be kept informed of progress throughout the assessment process.

## 9 REFERENCES

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