Environmental Assessment Scoping Report for:

Cadastral rectifications in Aimablaagte, Mariental, Hardap Region

September 2020

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PROJECT DETAILS

Title	Environmental Scoping Report for the: ▪ Cadastral rectifications in Aimablaagte, Mariental, Hardap Region		
Report Status	Final		
SPC Reference	W/17016		
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Report date	September 2020		
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LEGAL NOTICE

EXECUTIVE SUMMARY

Introduction

The Mariental Municipality, hereinafter referred to as the proponent intends to undertake the following activities:

- **Cadastral rectification for Aimablaagte Community Hall and Municipal Flats, Aimablaagte;**
- **Cadastral rectification for Public Open Spaces, Aimablaagte;**
- **Cadastral rectification for Church, Aimablaagte Mariental.**

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

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 and Tourism: Department of Environmental Affairs (MET: DEA).

Project Description

The proponent is undertaking several cadastral rectifications and re-planning in the neighbourhood of Aimablaagte. Each of these developments are outlined in **Section 4**.

Public Participation

Communication with 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 18 June 2020;
- Notices were placed in The New Era and The Sun newspapers dated 18 June 2020 and 25 June 2020, briefly explaining the activity and its locality, inviting members of the public to register as I&APs (**Appendix B**); and
- Notices were fixed at the project site (see **Appendix A**).

Public consultation was carried out according to the Environmental Management Act's EIA Regulations. After the initial notification, the I&APs were given two weeks to submit their comments on the project (until 9 July 2020).

The Draft Scoping Report was circulated from the **14th July 2020 until the 28th July 2020** so that the public could review and comment on it. The comment period will remain open until the final scoping report is submitted to MET.

Conclusions and Recommendations

With reference to Table 7, none of the negative operational 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).

It is recommended that this project be authorised as 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.

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF ANNEXURES

Annexure A: Proof of Site Notices/ Posters
Annexure B: Proof of Advertisements
Annexure C: Public Participation process
- I&AP Database & Registered List
- Notification Letters and Emails sent of BID
- Notification Letters and Emails sent of DESR
- Comment received (if any)

Annexure D: Curriculum Vitae and ID of Environmental Assessment Practitioner

Annexure E: Environmental Management Plan

LIST OF ACRONYMS

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

1 INTRODUCTION

1.1 PROJECT BACKGROUND

The Mariental Municipality, hereinafter referred to as the proponent intends to undertake the following activities:

- **Cadastral rectification for Aimablaagte Community Hall and Municipal Flats, Aimablaagte;**
- **Cadastral rectification for Public Open Spaces, Aimablaagte;**
- **Cadastral rectification for Church, Aimablaagte Mariental.**

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

In terms of the Environmental Management Act (No. 7 of 2007) and Environmental Impact Assessment Regulations (Government Notice No. 30 of 2012), the following listed activities in **Table 1** were triggered by the proposed project:

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 includes the rezoning of land from Public Open Space to other land uses.
Activity 10.1 (b) Infrastructure	The construction of Public roads	The proposed project includes the creation of street.
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 street.

The above activities will be discussed in more detail in Chapter 4. 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 (MEFT: DEA).

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 bio-physical 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, SIZE AND OWNERSHIP

The subject erven are located adjacent to one another in the central part of Mariental. The erven are located within the neighbourhood of Aimablaagte, Mariental. Please refer to **Figure 1** below for the locality of the intended development.

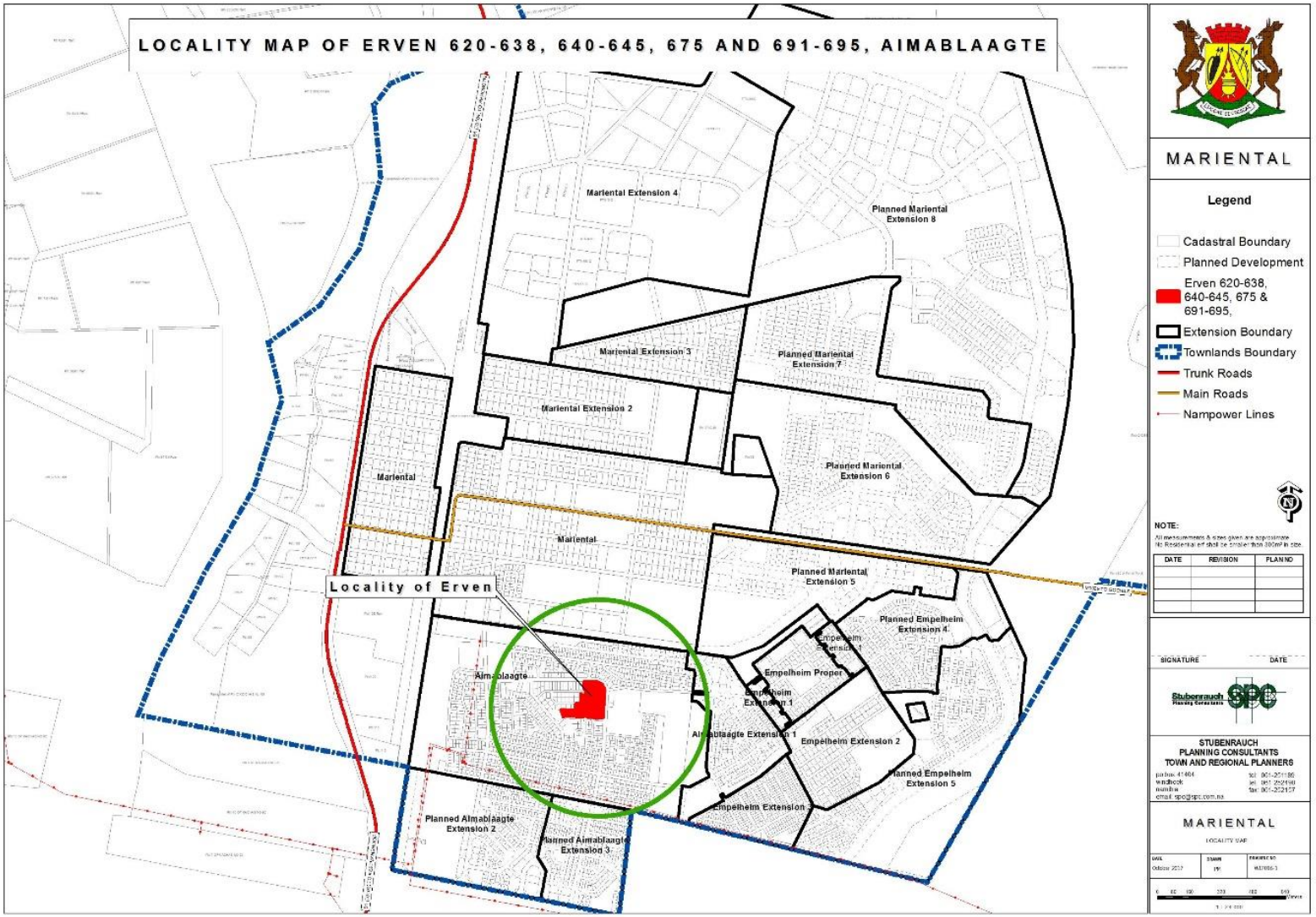

Figure 1: Locality of proposed development in Mariental

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:

- **Cadastral rectification for Aimablaagte Community Hall and Municipal Flats, Aimablaagte;**
- **Cadastral rectification for Public Open Spaces, Aimablaagte;**
- **Cadastral rectification for Church, Aimablaagte Mariental.**

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 Mariental 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 EAPs who prepared the report;	Refer to **Annexure D**
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,	Refer to Chapter 3

Section	Description	Section of FESR/ Annexure
	biological, social, economic and cultural aspects of the environment may be affected by the proposed listed activity;	
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 **Annexures A** and **B** for site notices and advertisements respectively.
	(iii) a list of all persons, organisations and organs of state that were registered in terms of regulation 22 as interested and affected parties in relation to the application;	Refer to **Annexure C**
	(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 **Annexure C**
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,	Refer to Chapter 7

Section	Description	Section of FESR/ Annexure
	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;	
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 **Annexure E**

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	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." Article 95(l) deals with the "maintenance of ecosystems, essential ecological processes and biological diversity" and sustainable use of the country's natural resources.	Sustainable development should be at the forefront of this development.
Environmental Management Act No. 7 of 2007 (EMA)	Section 2 outlines the objective of the Act and the means to achieve that. Section 3 details the principle of Environmental Management	The development should be informed by the EMA.
EIA Regulations GN 28, 29, and 30 of EMA (2012)	GN 29 Identifies and lists certain activities that cannot be undertaken without an environmental clearance certificate. GN 30 provides the regulations governing the environmental assessment (EA) process.	The following listed activities are triggered by the proposed project: **Activity 5.1 (d) Land Use and Development Activities** **Activity 10.1 (b) Infrastructure** **Activity 10.2 (a) Infrastructure**
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.
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.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
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.
Local Authorities Act No. 23 of 1992	The Local Authorities Act prescribes the manner in which a town or municipality should be managed by the Town or Municipal Council.	The development must comply with provisions of the Local Authorities Act.
Labour Act no. 11 of 2007	Chapter 2 details the fundamental rights and protections. Chapter 3 deals with the basic conditions of employment.	Given the employment opportunities presented by the development, compliance with the labour law is essential.
National Heritage Act No. 27 of 2004	The Act is aimed at protecting, conserving and registering places and objects of heritage significance.	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.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Roads Ordinance 17 of 1972	• Section 3.1 deals with width of proclaimed roads and road reserve boundaries • Section 27.1 is concerned with the control of traffic on urban trunk and main roads • Section 36.1 regulates rails, tracks, bridges, wires, cables, subways or culverts across or under proclaimed roads • Section 37.1 deals with Infringements and obstructions on and interference with proclaimed roads.	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
Environmental Assessment Policy of	The Policy seeks to ensure that the environmental consequences of development projects and policies	This EIA considers this term of Environment.

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
Namibia (1995)	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.	
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. 1of 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.
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	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).

LEGISLATION/POLICIES	RELEVANT PROVISIONS	RELEVANCE TO PROJECT
	Part V - air pollution by fumes emitted by vehicles.	
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 2** below) provides an outline of the EIA process to be followed.

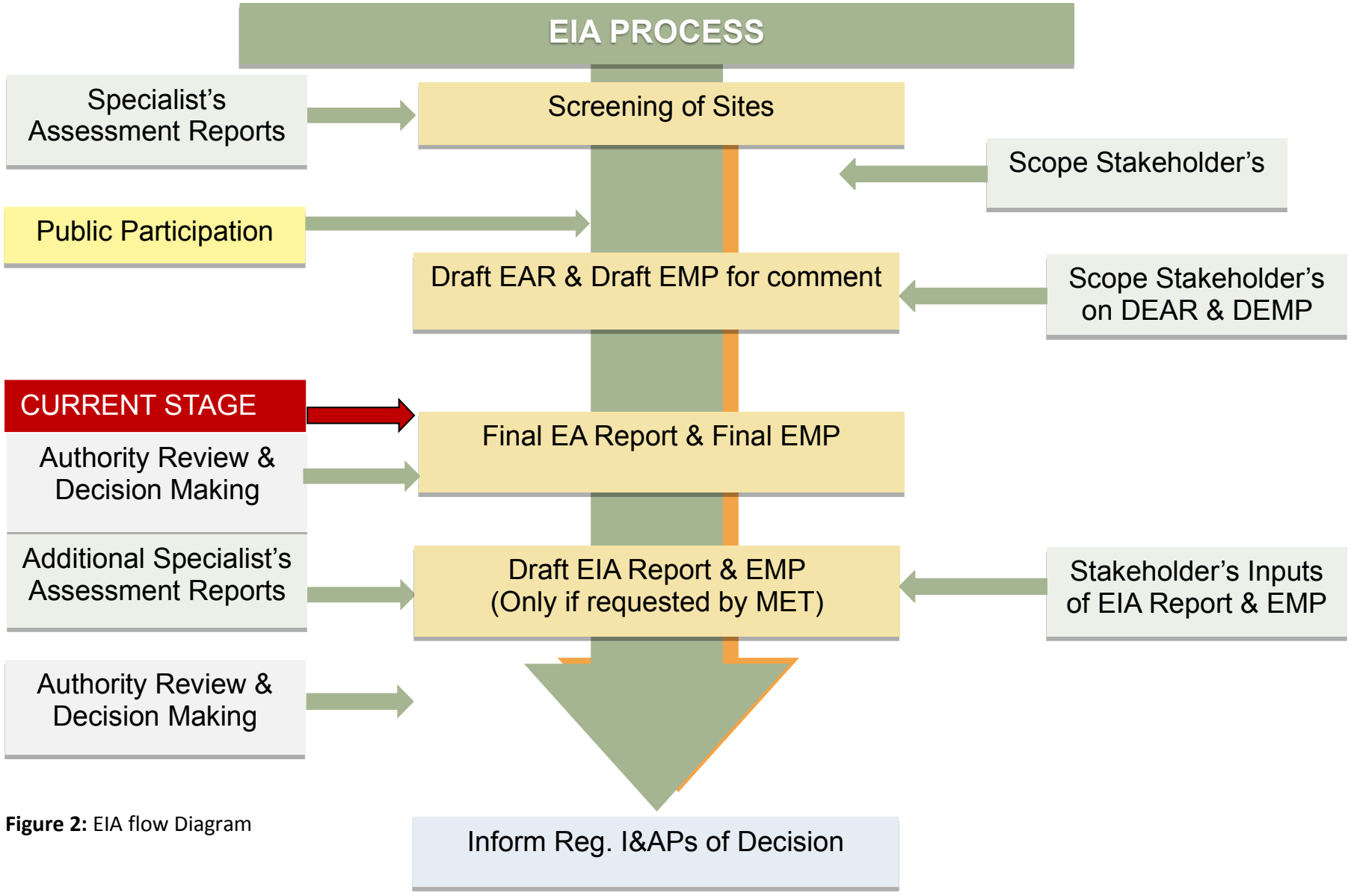

Figure 2: EIA flow Diagram

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, 2013), and presented from a local and regional perspective.

Table 4: Statistics of the Mariental Urban Constituency and Hardap Region (Namibia Statistics Agency, 2011)

MARIENTAL URBAN CONSTITUENCY	
ATTRIBUTE	**INDICATOR**
Population	15 557
Females	7 586
Males	8 051
Population under 5 years	12%
Population aged 5 to 14 years	21%
Population aged 15 to 59 years	62%
Population aged 60 years and above	5%
Female: male ratio	107:100
Literacy rate of 15 years old and above	94%
People above 15 years who have never attended school	8%
People above 15 years who are currently attending school	25%
People above 15 years who have left school	64%
People aged 15 years and above who belong to the labour force	71%
Population employed	64%
Homemakers	13%
Students	44%
Retired or old age income recipients	45%
Income from pension	7%
Income from business and non-farming activities	7%
Income from farming	3%
Income from cash remittance	3%
Wages and salaries	75%
Main Language	Afrikaans Languages- 49%
HARDAP REGION	
ATTRIBUTE	**INDICATOR**
Population	79 507
Population aged 60 years and above	8%
Population aged 5 to 14 years	21%
Population aged 15 to 59 years	59%

3.1.2 Archaeological and Heritage Context

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

3.2 BIO-PHYSICAL ENVIRONMENT

3.2.1 Climate

The climate of the subject area can be described as a hot desert climate (Köppen climate classification BWh), with very hot summers and extremely warm winters (with warm days and cold nights). The average annual temperature ranges between 20˚ and 21˚ Celsius as depicted in **Figure 3** below.

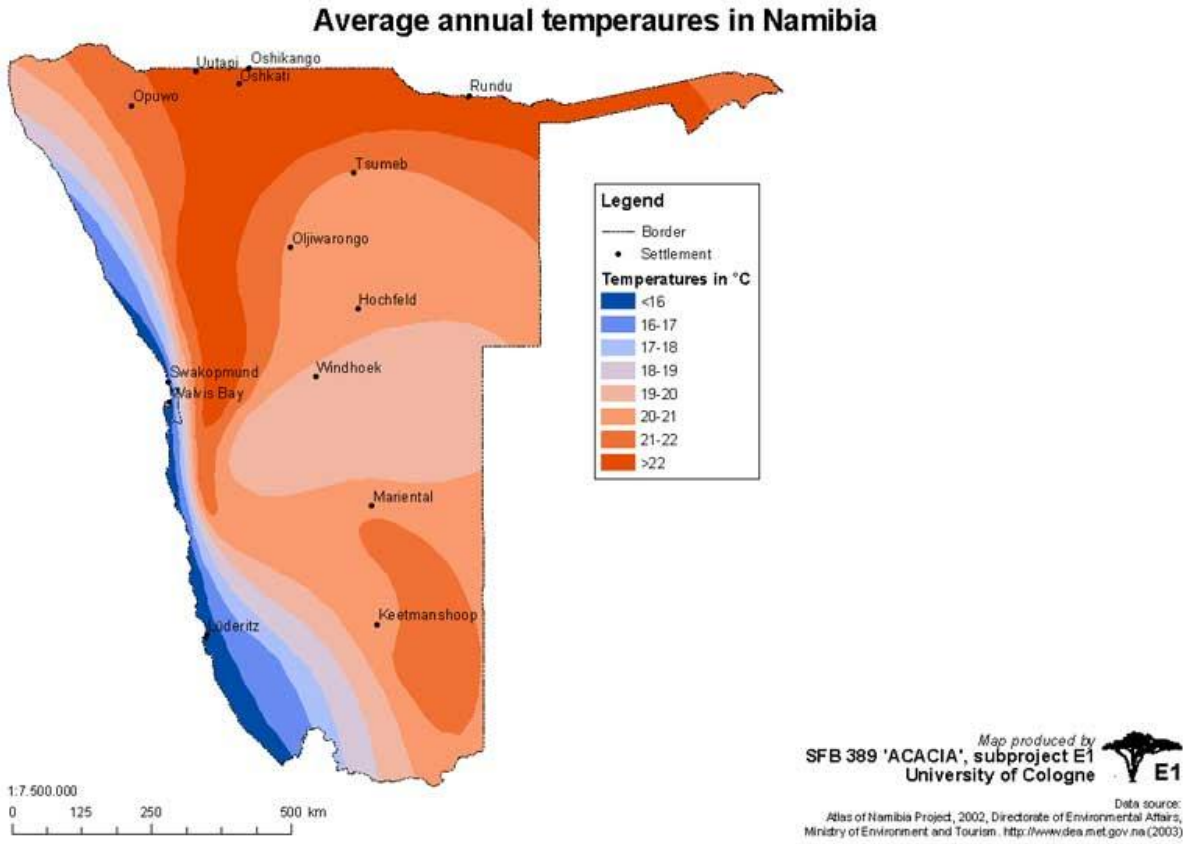

Figure 3: Annual average temperature (Acacia Project E1, n.d.)

The subject area generally experiences more rainfall than the south of the country with an average rainfall of 194 mm as indicated in **Figure 4** below.

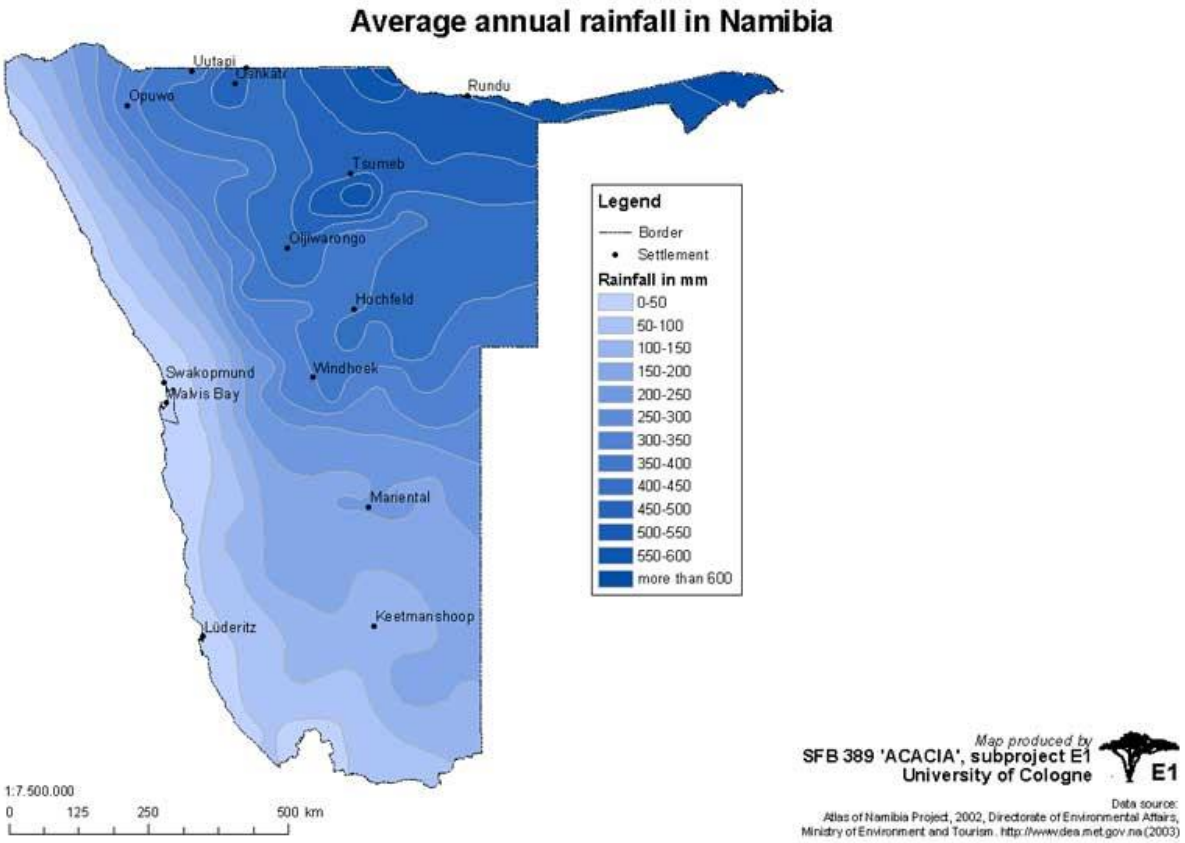

Figure 4: Average annual Rainfall (Acacia Project E1, n.d.)

3.2.2 Topography, Geology and Soils

The subject area forms part of the Kalahari Group Geological division depicted in pale yellow in **Figure 5** below. The dominant soils within the area are mainly sands and clays (Mendelsohn et al., 2002).

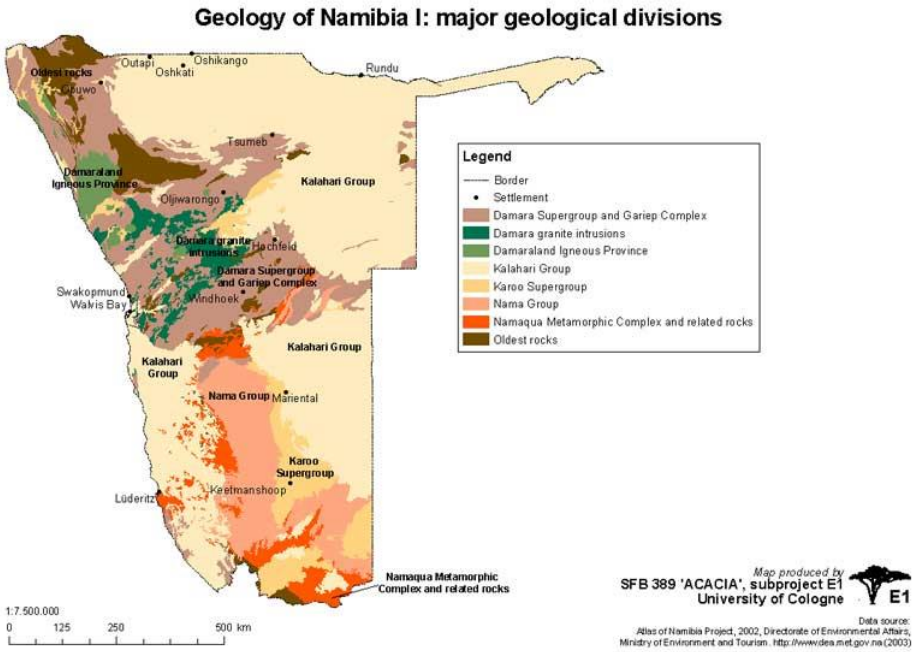

Figure 5: Geology of Namibia (Acacia Project E1, n.d.)

3.2.3 Hydrology and Hydrogeology

In terms of groundwater, the area falls within the Fish River -Aroab Basin groundwater basin depicted in **Figure 6** below. The hydrogeological Fish River- Aroab Basin comprises of some parts of Hardap Region and parts of the //Karas Region (Ministry of Agriculture Water and Rural Development, 2011).

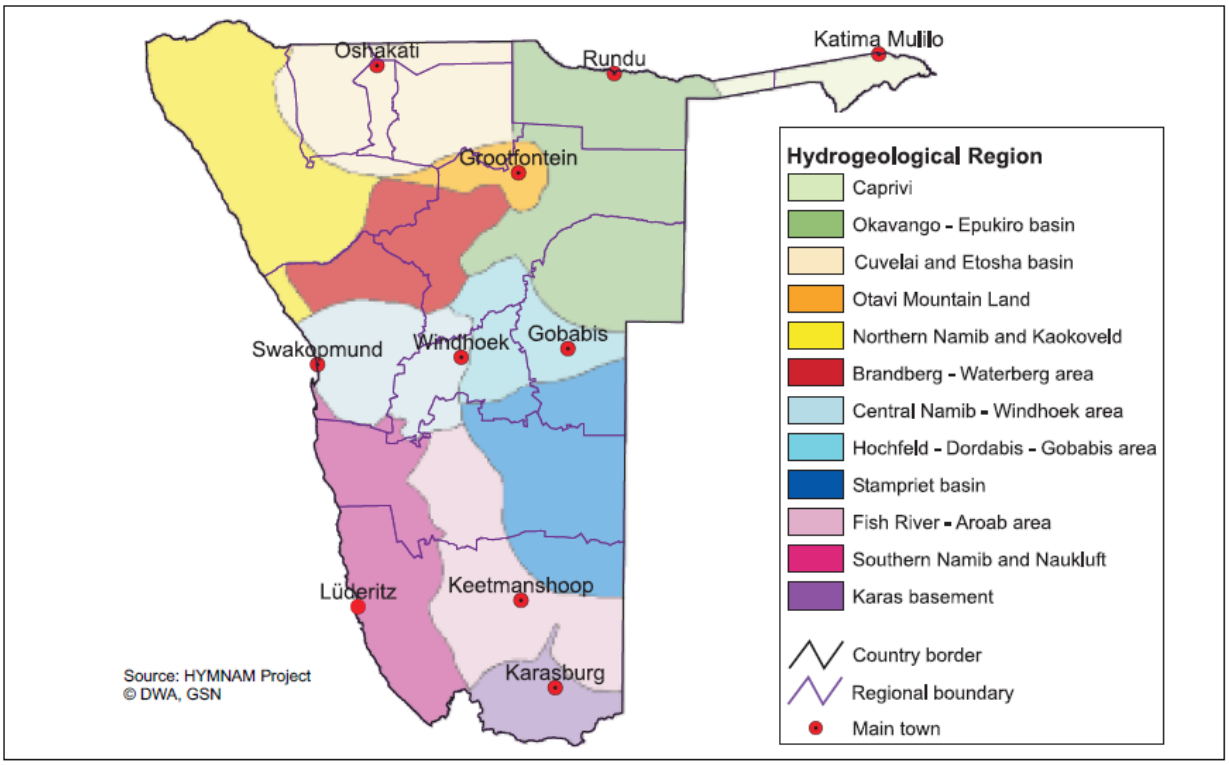

Figure 6: Groundwater basins and hydrogeological regions in Namibia (Ministry of Agriculture Water and Rural Development, 2011)

Rock types of the Nama Group are inherently impermeable with little or no primary porosity. Groundwater is hosted in secondary features like faults and joints in sedimentary rocks of clastic origin (sandstone, quartzite and shale) and in solution features in limestones and dolomites. In the Hardap and //Karas regions water levels are generally shallow in the east, close to the course of the Fish River, but become progressively deeper towards the escarpment in the west, where water levels deeper than 200m are recorded. (Mendelsohn, Jarvis, Roberts & Roberston, 2002)

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

Four main vegetation types occur within the landscape, the Succulent Steppe in the south and south-west, the Dwarf Shrub Savanna and the Karas Dwarf Shrubland. Hillsides are typically dominated by Euphorbia, Aloe and Boscia species, while on the plains, the dominant species include *Rhigozum trichotomum*, Parkinsonia africana and grasslands dominated by *Stipagrostis* species. Larger drainage lines are vegetated with *Acacia erioloba, A. karroo, Tamarix usneoides, Euclea pseudebenus* and *Rhus lancea*. The area is home to the black rhino, gemsbok, Hartmann's zebra, kudu, ostrich, springbok and steenbok. There is also a large variety of bird species can be observed in and around the dam (Twenty Namibian Trees, 2011).

There are no significant fauna and flora found to be located within the development area. The site is presently mostly developed and is situated within an urban area, as such no significant flora is expected to be found on the proposed site. No large wild animals are expected to be inhabitants except maybe for small rodents and insects that shelter in burrows and under rocks.

4 PROJECT DESCRIPTION

4.1 PROJECT COMPONENTS

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

- **Cadastral rectification for Aimablaagte Community Hall and Municipal Flats, Aimablaagte;**
- **Cadastral rectification for Public Open Spaces, Aimablaagte;**
- **Cadastral rectification for Church, Aimablaagte Mariental.**

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 current cadastral discrepancies will remain. As such the land uses on the ground would not correspond with the land uses in the Mariental Town Planning Scheme.

4.3 THE PROPOSED DEVELOPMENT

The proponent is undertaking several cadastral rectifications and re-planning in the neighbourhood of Aimablaagte. Each of these developments are outlined in the sections below.

4.3.1 Cadastral rectification for Aimablaagte Community Hall and Municipal Flats

4.3.1.1 Proposed Development

As per *Figure 12* **Figure 7** below, the Aimablaagte Community Hall is built on Erf 696, Aimablaagte. The boundary wall of the Community Hall however encroaches over the erf boundaries of Erven 670, 671 and 672, Aimablaagte.

Furthermore, the Municipal Flats are constructed over the erf boundaries of Erven 674 and 691-695, Aimablaagte. Some of these flats encroach onto Erven 672 and 673, Aimablaagte.

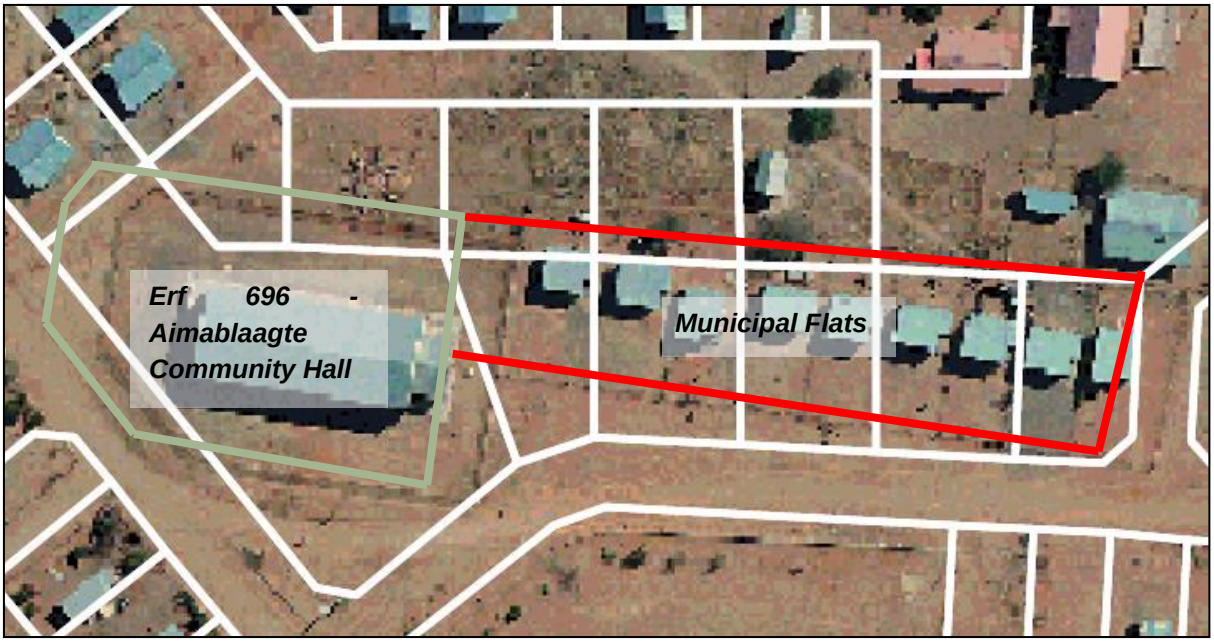

Figure 7: Encroachments in Aimablaagte

It is thus the intention of the proponent to undertake re-planning on Erven 670-674, 691-695 and 696, Aimablaagte.

The proponent intends on respecting the boundary wall of the Community Hall by subdividing, rezoning and consolidating the portions of "Residential" zoned erven on which the Community Hall encroaches.

A 2-meter-wide pedestrian walkway will be developed adjacent the proposed Community Hall. This walkway will shorten walking distances pedestrians have to walk between different parts of Aimablaagte and as a result encouraging pedestrian movement and reducing car dependency. The proposed walkway is to be widened at the southern end to allow for the placement of benches that will be used by pedestrians.

The Municipal Flats that are situated on Erven 691-695 and 674 Aimablaagte are built on "Residential" zoned erven that have a density of 1:300. The current zoning and density of the subject erven does not allow for flats. It is therefore needed to consolidate and rezone the subject erven to "General Residential" for the purposes of dwelling units/flats.

The proponent further intends on creating one "Residential" zoned erf on Erven 670-673, Aimablaagte. This erf will be sold to a prospective buyer.

Lastly, the proponent seeks to widen a portion of the street situated adjacent Erf 674, Aimablaagte to form a cul-de-sac. This is to create enough street width for cars and municipal service vehicles to make a turn within the cul-de-sac at this end of the street. **Figure 8** below illustrates the proposed development once the rectifications have been undertaken.

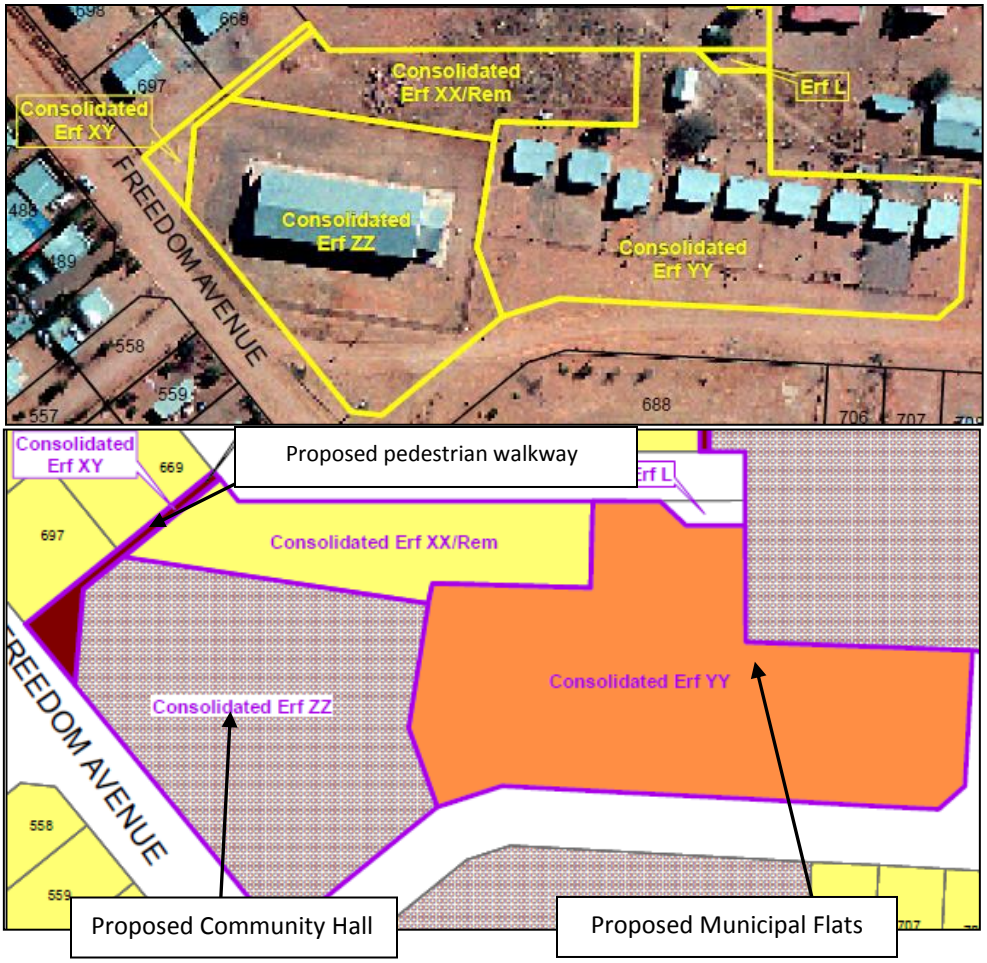

Figure 8: The Proposed Development

The following statutory steps need to be undertaken in order for the above rectification take place:

- **Subdivision of Erf 670, Aimablaagte into Erf G and Remainder;**
- **Consolidation of proposed Erf 670/REM with Erven 671-673, Aimablaagte into Consolidated Erf "XX";**
- **Rezoning of Erf "G" (a portion of Erf 670), Aimablaagte from "Residential" with a density of 1:300 to "Local Authority";**
- **Subdivision of Consolidated Erf "XX" into Erven H, J and Remainder**

- **Rezoning of Erf H (comprising of portions of Erven 670/REM, 671 and 672), Aimablaagte from "Residential" with a density of 1:300 to "Institutional";**
- **Rezoning of Erf "J" (comprising of portions of Erven 672 and 673), Aimablaagte from "Residential" with a density of 1:300 to "General Residential" with a density of 1:250;**
- **Subdivision of Erf 695, Aimablaagte into Erf K and Remainder;**
- **Rezoning of Erf K (comprising of portion of Erf 695), Aimablaagte from "Residential" with a density of 1:300 to "Institutional";**
- **Subdivision of Erf 674, Aimablaagte into Erf L and Remainder;**
- **Reservation of Erf L (a portion of Erf 674), Aimablaagte as a "street";**
- **Rezoning of Erf 674/REM and Erven 691-695/REM, Aimablaagte from "Residential" with a density of 1:250;**
- **Consolidation of Erven 674/REM, 691-695/REM and Erf J, Aimablaagte into Consolidated Erf "YY";**
- **Subdivision of Erf 696, Aimablaagte into Erf M and Remainder;**
- **Consolidation of Erf H (comprising of portions of Erven 670-672), Erf K (a portion of Erf 695) and the Remainder of Erf 696, Aimablaagte into Consolidated Erf "ZZ";**
- **Rezoning of Erf M (a portion of Erf 696), Aimablaagte from "Institutional" to "Local Authority";**
- **Consolidation of Erf G (a portion of Erf 670) and Erf M (a portion of Erf 696), Aimablaagte into Consolidated Erf XY.**

4.3.2 Engineering services and Access Provision

Erven 670-674, 691-696, Aimablaagte are connected to the municipal reticulation system of the Mariental Municipality. The existing services are anticipated to be sufficient for the proposed development as the proposed development seeks only to formalise an already existing situation.

Access to the erven can be obtained via the internal street network of Aimablaagte.

4.4 CADASTRAL RECTIFICATION FOR AIMABLAAGTE COMMUNITY HALL AND MUNICIPAL FLATS

4.4.1 Proposed Development

It is the intension of the proponent to create two "Public Open Spaces" as well as a "Street" on Erven 617-626 and 641-649, Aimablaagte. The subject area (Erven 624-626, and 641, Aimablaagte) has over the years experienced stormwater ponding problems. This area is low lying, and as a result; water is channelled onto the subject erven during the occasional rainy season.

Given the stormwater ponding problem experienced on Erven 624-626 and 641, Aimablaagte, this area (which is currently zoned for "Residential" purposes) is undeveloped and cannot be used to accommodate dwelling units. The proponent thus intends on reserving Erven 622-626 and 641-643, Aimablaagte as a

"Public Open Space" to accommodate occasional stormwater ponding and to provide a play park and recreation area on the higher lying area of the consolidated property.

In addition, the Aimablaagte Lutheran Church situated south of Erven 617-626 and 641-649, Aimablaagte requested the Municipality to provide them with additional land which they can use for additional parking and outdoor social events. The proponent therefore intends on reserving Erven 617-620 and 645-649, Aimablaagte as a community "Public Open Space".

Erven 617-620 and 645-649, Aimablaagte, are not affected by the stormwater. The subject erven can thus be developed into a functional "Public Open Space".

Figure 9 below illustrates the current layout and demarcation of Erven 617-626 and 641-649, Aimablaagte, while **Figure 10** depicts the proposed rectification on the subject erven.

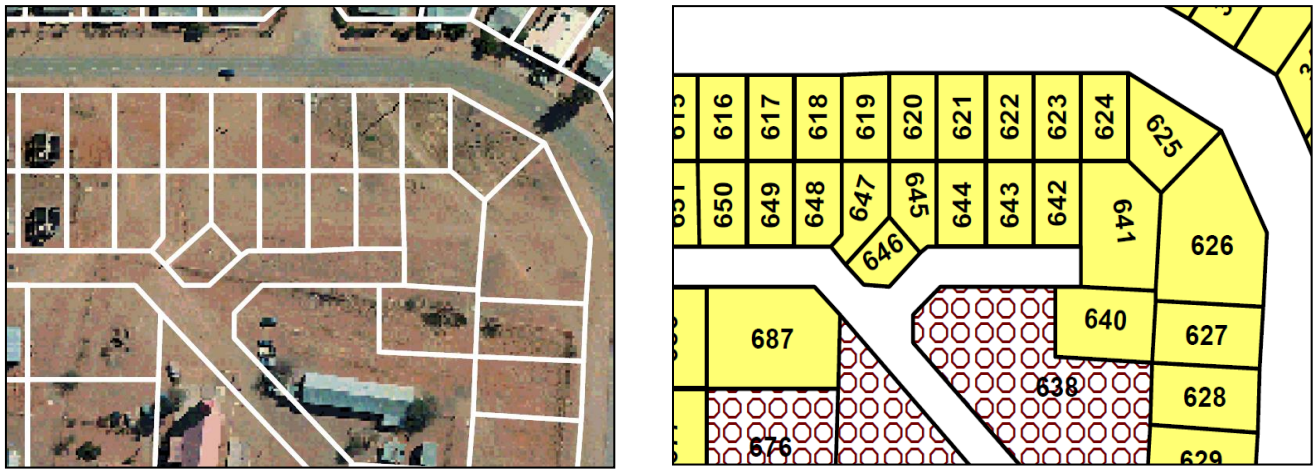

Figure 9: Existing layout

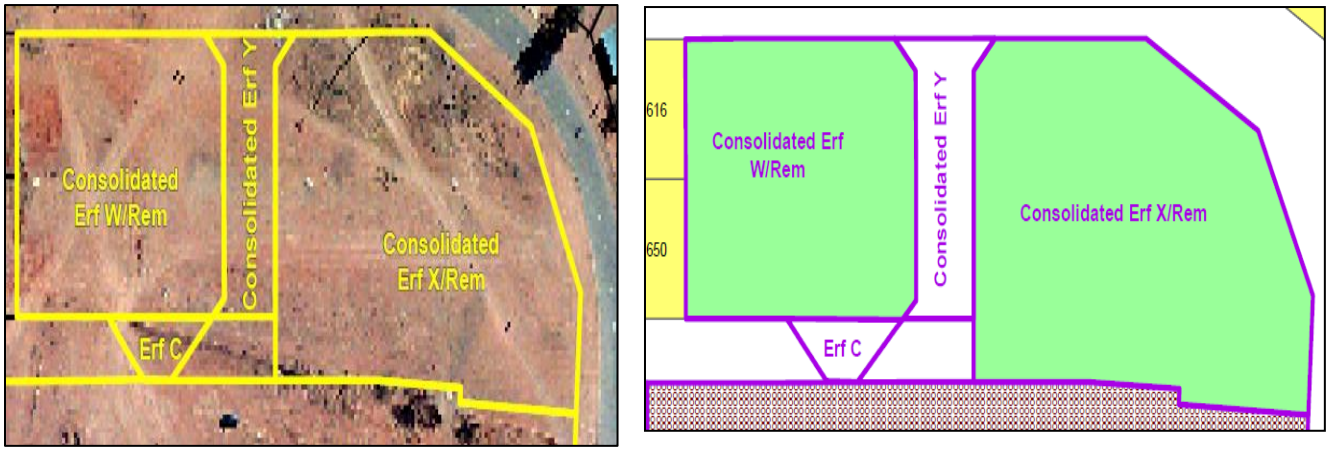

Figure 10: Proposed Development Layout

The following statutory steps need to be undertaken in order for the proposed rectification to be completed:

- **Consolidation of Erven 617-620 and Erven 645-649, Aimablaagte into Consolidated Erf "W";**
- **Subdivision of Consolidated Erf "W" into Erven A, B, C and Remainder;**
- **Reservation of the Remainder of Consolidated Erf "W", Aimablaagte as a "Public Open Space";**
- **Reservation of Erf C (of Consolidated Erf "W"), Aimablaagte as a "Street';**
- **Subdivision of Street 2 into Portion A, Portion B and the Remainder;**
- **Permanent closure of Portion A (a portion of Street 2) as a "Street";**
- **Consolidation of Erven 622-626, 641-643 and Portion A, Aimablaagte into Consolidated Erf "X";**
- **Subdivision of Consolidated Erf "X", Aimablaagte into Erf D and Remainder;**
- **Reservation of the Remainder of Consolidated Erf "X", Aimablaagte as a "Public Open Space";**
- **Consolidation of Erven A, B, D, 621 and 644, Aimablaagte into Consolidated Erf Y;**
- **Reservation of Consolidated Erf "Y", Aimablaagte as a "Street".**

4.4.2 Engineering services and Access Provision

Erven 617-620, 645-649, 622-626 and 641-643, Aimablaagte are connected to the municipal reticulation system of the Mariental Municipality. The existing services are anticipated to be sufficient for the proposed development as the proposed zoning has less service requirements.

Access to the erven can be obtained via the internal street network of Aimablaagte.

4.5 CADASTRAL RECTIFICATION FOR CHURCH, AIMABLAAGTE

4.5.1 Proposed Development

It is the intension of proponent to formalise the area upon which the Aimablaagte Lutheran Church is situated. The proponent intends on giving this land to the Church once this project has been finalised.

The Aimablaagte Lutheran Church is currently built across the common borders of Erven 627-638, 640, 675, 676 and 687, Aimablaagte. This area has been fenced off by the Church as can be seen on the below aerial photo clip (**Figure 11**).

Figure 11: Aerial Photo Clip

Prior to the initial planning process that resulted in the current demarcation of Aimablaagte, the Church owned the subject area which has now been demarcated into various erven, (of which some are now zoned for “Residential” purposes). The initial planning process also led to the creation of a street that is situated within the fenced area. However, given that this street has been fenced off and now forms part of the Church's site, this street is no longer used by the community for access purposes.

Figure 12 below illustrates the current layout and demarcation of Erven 627-638, 640, 675, 676 and 687, Aimablaagte, while **Figure 13** depicts the proposed church rectification.

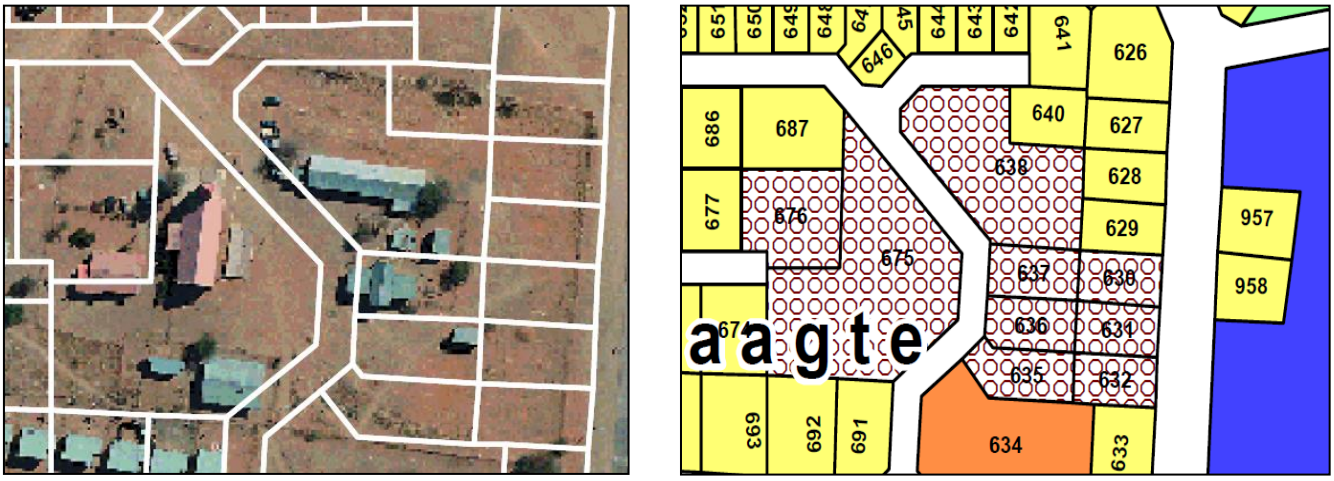

Figure 12: Existing situation

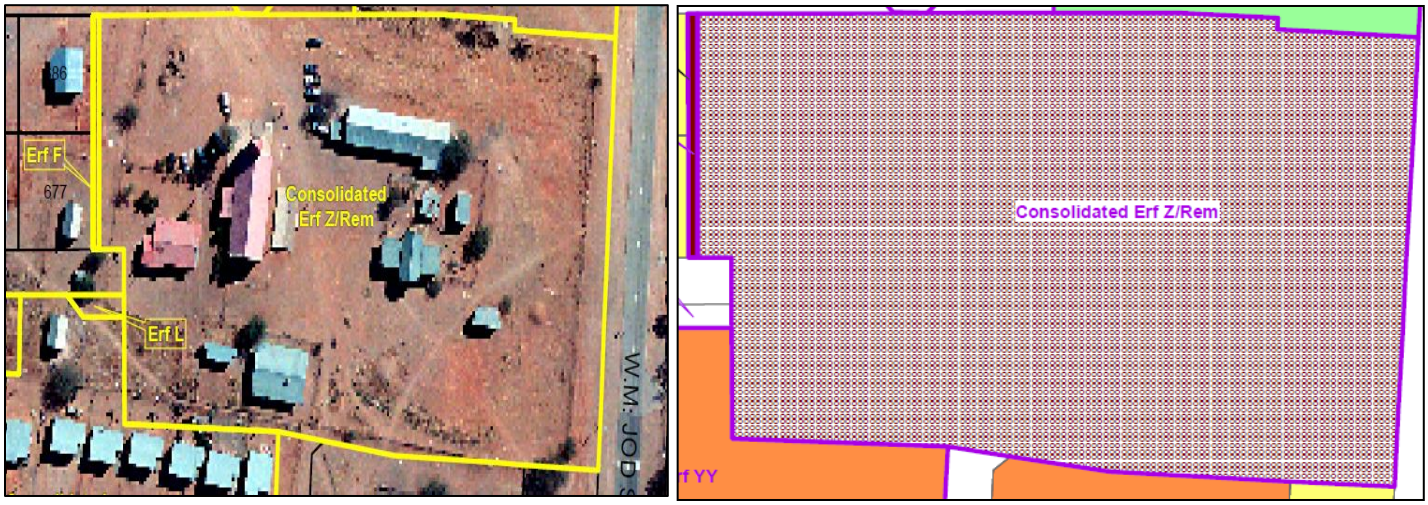

Figure 13: Proposed Church Site

The following statutory steps need to be undertaken in order for the proposed rectification to be completed:

- **Subdivision of Erf 634, Aimablaagte into Erf E and Remainder;**
- **Rezoning of Erf E/634, Aimablaagte from "General Residential" with a density of 1:100 to "Institutional";**
- **Rezoning of Erven 627-629 and 687, Aimablaagte from "Residential" with a density of 1:300 to "Institutional"**
- **Rezoning of Erven 630, 632-637, Aimablaagte from "General Residential" to "Institutional";**
- **Consolidation of Erven 627-632, 635-638, 640, 675, 676, 687, E/634 and Portion B (former street), Aimablaagte into Consolidated Erf Z;**
- **Subdivision of Consolidated Erf Z, Aimablaagte into Erf F and Remainder;**
- **Rezoning of Erf F (of Consolidated Erf Z), Aimablaagte from "Institutional" to "Local Authority".**

4.6 ENGINEERING SERVICES AND ACCESS PROVISION

Erven 627-638, 640, 675, 676 and 687, Aimablaagte are connected to the municipal reticulation system of the Mariental Municipality. The existing services are anticipated to be sufficient for the proposed development as the proposed development seeks only to formalise an already existing situation.

Access to the erven will be obtained from the internal street network of Aimablaagte.

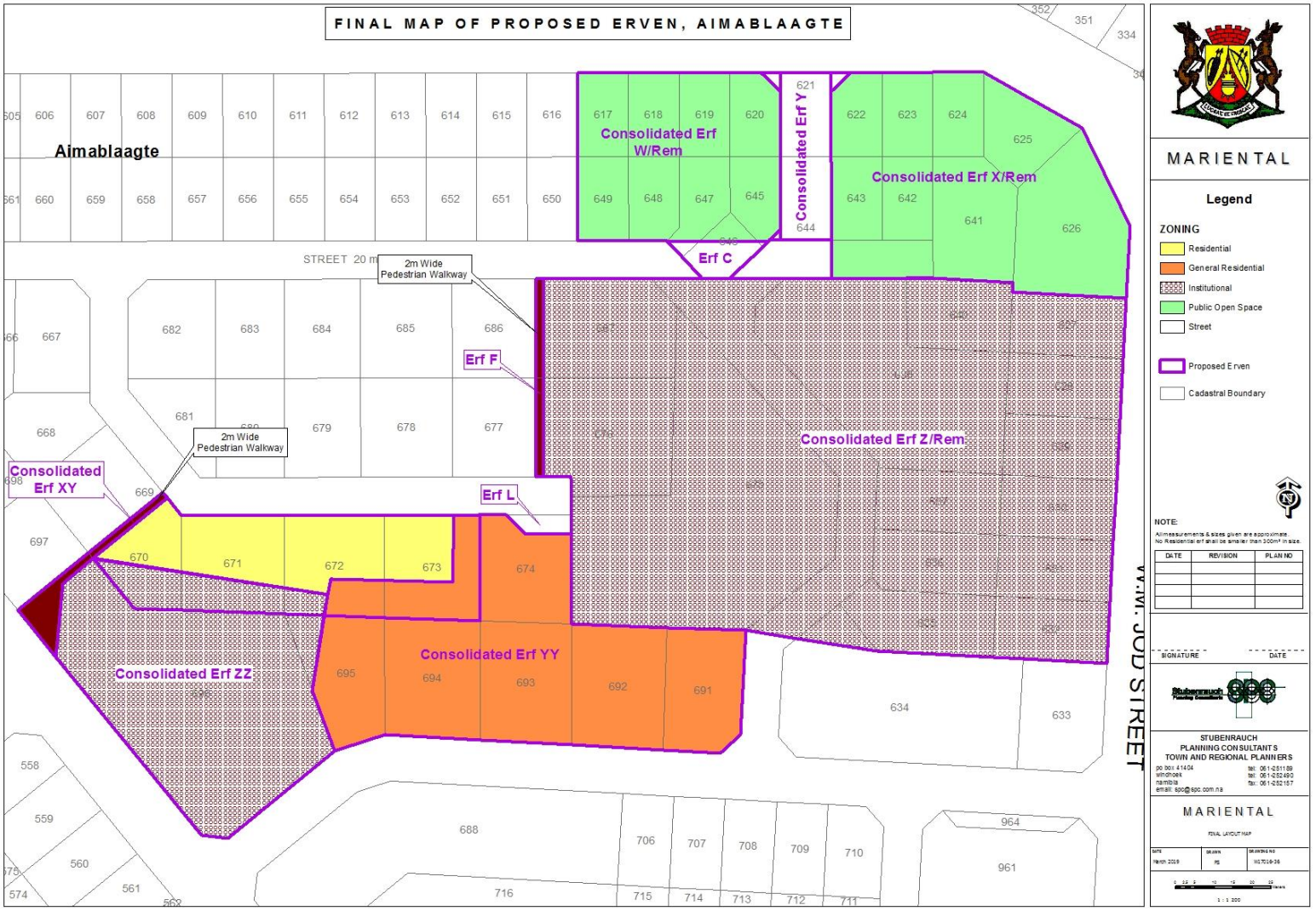

Figure 14: Final map of proposed cadastral rectifications in Aimablaagte

Figure 15: Aerial map of proposed cadastral rectifications in Aimablaagte

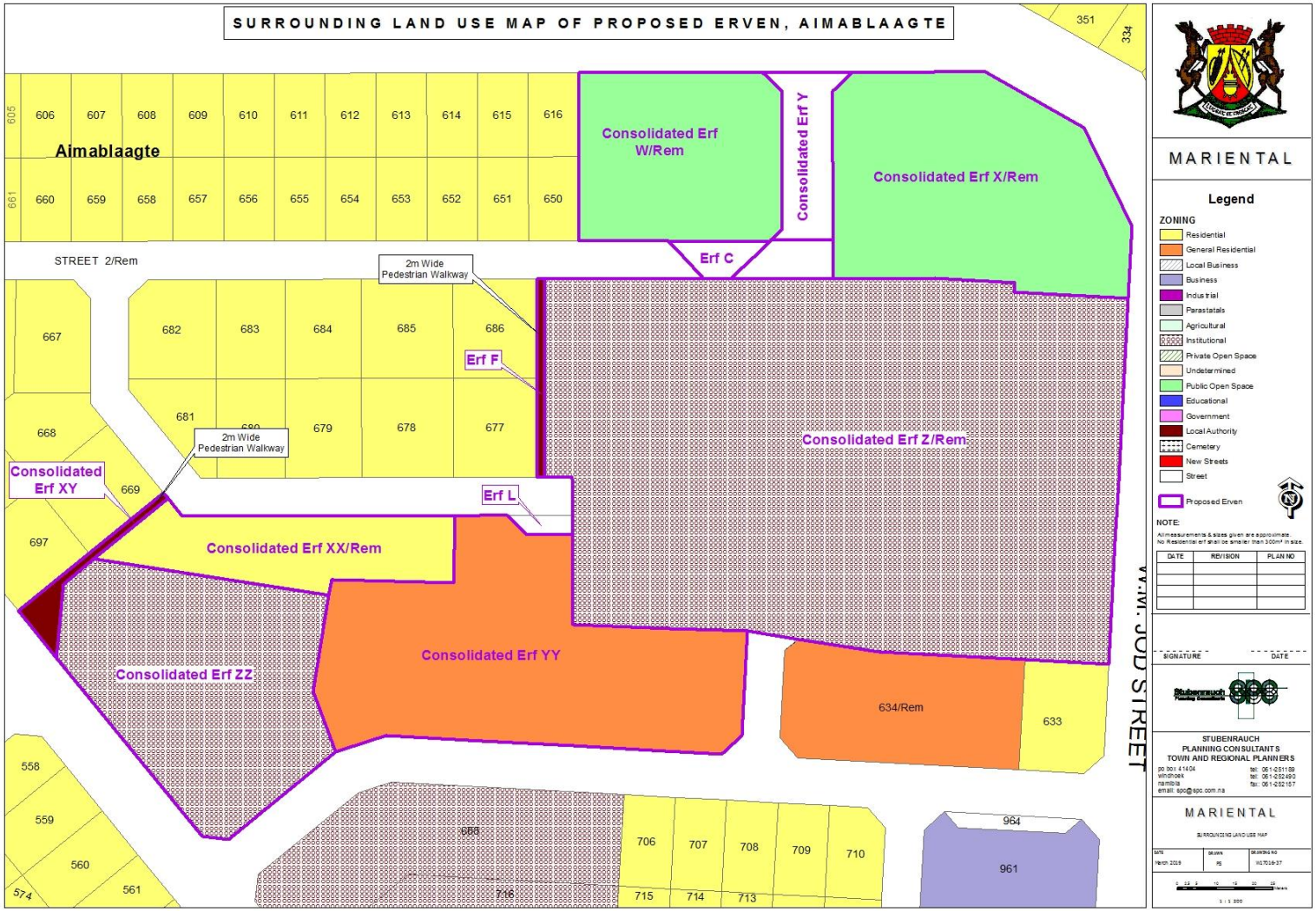

Figure 16: Surrounding Land Use Map

4.6.1 Engineering Services and Access Provision

The erven are proposed to be connected to the existing municipal reticulation system. It is anticipated that these services are sufficient to accommodate the proposed development.

Access to the erven are to be obtained from the internal street network of Mariental.

5 PUBLIC PARTICIPATION PROCESS

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 5** below for the activities undertaken as part of the public participation process. The I&APs were given time to comment from **18 June 2020 to 9 July 2020.**

Table 5: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice in Mariental	See **Annexure A**
Placing advertisements in two newspapers namely the New Era and The Sun (**18 June and 25 June 2020**)	See **Annexure B**
Written notice to surrounding property owners and Interested and Affected Parties via Email (**18 June 2020**)	See **Annexure C**

No comments were received during the initial comment period (18 June 2020 until 9 July 2020).

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 **14 July 2020**. An Executive Summary of the DESR was also included in the letters to the registered I&APs. I&APs had until **28 July 2020** to submit comments or raise any issues or concerns they may have with regard to the proposed project. No comments were received during the phase 2 comment period.

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 6**.

Table 6: Impact Assessment Criteria

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

CRITERIA	CATEGORY
	Low: Natural and/or social functions/processes are slightly altered **Medium:** Natural and/or social functions/processes are notably altered in a modified way **High:** Natural and/or social functions/processes are severely altered and may temporarily or permanently cease
Probability of occurrence Describe the probability of the Impact actually occurring	**Improbable:** Not at all likely **Probable:** Distinctive possibility **Highly probable:** Most likely to happen **Definite:** Impact will occur regardless of any prevention measures
Degree of Confidence in predictions State the degree of confidence in predictions based on availability of information and specialist knowledge	**Unsure/Low:** Little confidence regarding information available (<40%) **Probable/Med:** Moderate confidence regarding information available (40-80%) **Definite/High:** Great confidence regarding information available (>80%)
Significance Rating The impact on each component is determined by a combination of the above criteria.	**Neutral:** A potential concern which was found to have no impact when evaluated **Very low:** Impacts will be site specific and temporary with no mitigation necessary. **Low:** 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 **Medium:** 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. **High:** 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

Figure 17: Mitigation Hierarchy

There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 17** 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.

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

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: DEA for consideration. In turn, MEFT: DEA'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 Existing Service Infrastructure Impacts

The subject erven are connected to the municipal reticulation network of Mariental. It will then be incumbent of the proponent to apply for the appropriate services such as electricity and water, and the required demand for the proposed activity.

7.1.2 Stormwater Impacts

The subject area (particularly Erven 624-626, and 641, Aimablaagte) has in the past experienced stormwater ponding problems particularly during the rainy season. No permanent structures are to be erected on the proposed new Public Open Spaces to ensure that the flow of natural water during the rainy season is not disturbed.

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.

7.2.1 Flora and Fauna Impacts (Biodiversity)

The proposed site is mostly developed and is thus sparsely vegetated as such no significant impacts on biodiversity are anticipated for the proposed activity.

7.2.2 Waste Generation

During construction, waste may be generated on site which would have to be managed appropriately in accordance with the provisions for waste management in the EMP.

7.2.3 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.

7.3 CONSTRUCTION PHASE IMPACTS ON THE SOCIO-EONOMIC 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.

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 so as 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 is expected to increase during the construction phase of the project 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.

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.

7.4 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.

7.4.1 Traffic Impacts

Traffic is not expected to be impacted significantly as the proposed development involves the rectification of an existing situation on the ground and traffic is not expected to increase due to the proposed new land uses for the area.

7.4.2 Waste Generation

Waste will be generated during the operation of the proposed development. It waste is to be managed and disposed of in conjunction with the local Municipality regulations regarding the disposal and handling of waste.

7.4.3 Visual Impacts

The proposed development is not expected to have a significant change in visual characteristics of the site as the site is mostly already developed. The extent of this disturbance will depend on how highly the interested and affected parties valued the initial aesthetic quality of the site.

7.4.4 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 erven it is not expected that the noise levels will be significant if managed well.

7.4.5 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.

7.4.6 Employment creation

A small number of residents from Mariental could benefit from employment during construction at the site.

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 7**. The **Tables 8 – 9** 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 7: 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
PLANNING AND DESIGN PHASE										
1. Existing services	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium-Low (-ve)
		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
2. Stormwater	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium	Medium term	Medium	Probable	Certain	Reversible	Medium-Low (-ve)
		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
CONSTRUCTION PHASE										
3. Biodiversity (Fauna and Flora)	Cadastral Rectifications Aimablaagte	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very Low	Short term	Very Low	Probable	Certain	Reversible	Low (-ve)
	No go	No 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
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
4. Surface & ground water	Cadastral Rectifications Aimablaagte	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
5. Waste Generation	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium	Short term	Medium	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
6. Heritage	Cadastral Rectifications Aimablaagte	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

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
7. Health, safety and security	Cadastral Rectifications Aimablaagte	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
8. Traffic impacts	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium	Short term	Medium	Probable	Certain	Reversible	Low (-ve)
		Mitigation	Local	Medium-Low	Short term	Medium-Low	Probable	Certain	Reversible	Very low
	No go	No mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
9. Noise impacts	Cadastral Rectifications Aimablaagte	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
10. Dust & emissions impacts		No mitigation	Local	Medium	Short 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
	Cadastral Rectifications Aimablaagte	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
11. Municipal services	Cadastral Rectifications Aimablaagte	No mitigation	Local	Low	Short term	Medium - Low	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
12. Disturbance to surrounding residents	Cadastral Rectifications Aimablaagte	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very 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
13. Hazardous Substances		No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
	Cadastral Rectifications Aimablaagte	Mitigation	Local	Very 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
14. Waste	Cadastral Rectifications Aimablaagte	No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)
		Mitigation	Local	Very 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
OPERATIONAL PHASE										
1. Visual & sense of place	Cadastral Rectifications Aimablaagte	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
2. Waste		No mitigation	Local	Low	Short term	Medium	Probable	Certain	Reversible	Medium (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
	Cadastral Rectifications Aimablaagte	Mitigation	Local	Very 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
3. Noise	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium-Low	Medium term	Medium-Low	Probable	Certain	Reversible	Medium-Low (-ve)
		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
4. Dust &emissions	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium-Low	Medium term	Low	Probable	Certain	Reversible	Medium-Low (-ve)
		Mitigation	Local	Low	Medium term	Medium-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
5. Social impact	Cadastral Rectifications Aimablaagte	No mitigation	Local	Medium	Long term	Low (+)	Probable	Probable	Reversible	High (+)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
	No go	No mitigation	Local	Neutral	Long term	Neutral	Probable	Probable	Reversible	Neutral

Table 8: Proposed mitigation measures for the planning and design phase

PLANNING AND DESIGN PHASE IMPACTS	
Impact	**Mitigation Measures**
Existing Service Infrastructure	• Water saving mechanisms should be considered for incorporation within the developments in order to further reduce water demands. • Re-use of treated wastewater should be considered wherever possible to reduce the consumption of potable water.

Table 9: Proposed mitigation measures for the construction phase

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
Flora and Fauna	• Prevent the destruction of protected and endemic plant species. • 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. • The plants that are to be kept should be clearly marked with “danger tape” to prevent accidental removal.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Regular inspection of the marking tool should be carried out. • Recommend the planting of local indigenous species of flora as part of the landscaping as these species would require less maintenance than exotic species. • Transplant removed plants where possible, or plant new plants in lieu of those that have been removed. • Prevent the introduction of potentially invasive alien ornamental plant species such as; *Lantana, Opuntia, Prosopis, Tecoma*, etc.; as part of the landscaping as these species could infest the area further over time.
Surface and Ground Water Impacts	• It is recommended that construction takes place outside of the rainy season in order to limit flooding on site and surface water pollution. • No dumping of waste products of any kind in or in close proximity to surface water bodies. • 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. • Ensure that oil/ fuel spillages from construction vehicles and machinery are minimised and that where these occur, that they are appropriately dealt with. • Drip trays must be placed underneath construction vehicles when not in use to contain all oil that might be leaking from these vehicles. • Contaminated runoff from the construction sites should be prevented from entering the surface and ground water bodies. • All materials on the construction site should be properly stored. • Disposal of waste from the sites should be properly managed and taken to the designated landfill site. • Construction workers should be given ablution facilities at the construction sites that are located at least **30 m** away from any surface water and regularly serviced.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• 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.
Heritage	• The project management should be made aware of the provisions of the National Heritage Act regarding the prompt reporting of archaeological finds. • In the event of such finds, construction must stop, and the project management or contractors should notify the National Heritage Council of Namibia immediately.
Health, Safety and Security	• Construction personnel should not overnight at the site, except the security personnel. • Ensure that all construction personnel are properly trained depending on the nature of their work. • Provide for a first aid kit and a properly trained person to apply first aid when necessary. • Restrict unauthorised access to the site and implement access control measures. • Clearly demarcate the construction site boundaries along with signage of “no unauthorised access”. • Clearly demarcate dangerous areas and no-go areas on site. • Staff and visitors to the site must be fully aware of all health and safety measures and emergency procedures. • The contractor must comply with all applicable occupational health and safety requirements. • The workforce should be provided with all necessary Personal Protective Equipment where appropriate.
Traffic	• Limit and control the number of access points to the site. • Ensure that road junctions have good sightlines. • Construction vehicles’ need to be in a road worthy condition and maintained throughout the construction phase. • Transport the materials in the least number of trips as possible. • Adhere to the speed limit.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Implement traffic control measures where necessary.
Noise	• No amplified music should be allowed on site. • Inform immediate neighbours of construction activities to commence and provide for continuous communication between the neighbours and contractor. • Limit construction times to acceptable daylight hours. • Install technology such as silencers on construction machinery. • Do not allow the use of horns as a general communication tool but use it only where necessary as a safety measure.
Dust and Emission	• Dust abatement techniques should be implemented if dust levels are found to be significant. • Construction vehicles to only use designated roads. • During high wind conditions the contractor must make the decision to cease works until the wind has calmed down. • Cover any stockpiles with plastic to minimise windblown dust. • Provide workers with dust masks if dust levels are significant.
Waste	• It is recommended that waste from the temporary toilets be disposed of at an approved Wastewater Treatment Works. • A sufficient number of waste bins should be placed around the site for the soft refuse. • A sufficient number of skip containers for the heavy waste and rubble should be provided for around the site.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Solid waste must be collected and disposed of at an appropriate local landfill or an alternative approved site, in consultation with the local authority.
Hazardous Substances	• 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. • Refuel vehicles in designated areas that have a protective surface covering and utilise drip trays for stationary plant.

Table 10: Proposed mitigation measures for the operational phase

OPERATIONAL PHASE IMPACTS	
Impact	**Mitigation Measures**
Surface and Ground Water	• A no-go buffer area of at least 15 m should be allocated to any water bodies in the area. • No dumping of waste products of any kind in or in close proximity to any surface water bodies. • Contaminated runoff from the various operational activities should be prevented from entering any surface or ground water bodies. • Ensure that surface water accumulating on-site are channeled and captured through a proper storm water management system to be treated in an appropriate manner before disposal into the environment.

OPERATIONAL PHASE IMPACTS	
Impact	**Mitigation Measures**
	• Disposal of waste from the various activities should be properly managed.
Visual and Sense of Place	• 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. • 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. • 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).
Noise	• Continuous monitoring of noise levels should be conducted to make sure the noise levels does not exceed acceptable limits. • No activity having a potential noise impact should be allowed after 18:00 hours if possible.
Emissions	• Manage activities that generate emissions.
Social Impacts	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

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

8.1 CONSTRUCTION PHASE IMPACTS

With reference to **Table 7**, 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

With reference to **Table 7**, none of the negative operational 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)***.

8.3 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: DEA 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: DEA could be enforced as Conditions of Approval in the Environmental Authorisation, should MEFT: DEA 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 as 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: DEA for consideration and decision making. If MEFT: DEA approves or requests additional information / studies all registered I&APs and stakeholders will be kept informed of progress throughout the assessment process.

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