Environmental Assessment Scoping Report for:

June 2020

Permanent Closure of Erf A (A Portion of Erf 1941) and Erf B (A Portion of Erf 825) Keetmanshoop measuring ± 12.30m² and ± 1896.56m² in extent respectively as Street

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PROJECT DETAILS

Title	Environmental Scoping Report for the: ▪ Permanent Closure of Erf A (A Portion of Erf 1941) and Erf B (A Portion of Erf 825) Keetmanshoop measuring ± 12.30m² and ± 1896.56m² in extent respectively as Street		
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LEGAL NOTICE

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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
MET	Ministry of Environment and Tourism
MET: DEA	Ministry of Environment 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

Keetmanshoop being the capital city of the //Karas Region is in need of a private medical facility which provides medical services which are not readily available in the town currently. As such the proponent intends to develop and operate a Private Hospital that includes ancillary services such as a pharmacy, medical offices and tuck shop. In order to allow for the proposed development, the proponent intends to undertake the following activities:

- **Consolidation of Erven 159, 161 and 162 into consolidated Erf X, Keetmanshoop;**
- **Consent use to operate and construct an Institutional Building (Private Hospital -that includes ancillary services such as a pharmacy, medical offices and tuck shop.) on the consolidated Erf X (Erven 159, 161 and 162) and the proposed rezoned Erf 163;**
- **Rezoning of Erf 163 Keetmanshoop from "Residential 3" to "Business 2";**
- **Subdivision, Purchase and Closure of Street Portion (Cathedral/8th street);**
- **Consolidation of closed street with "Consolidated Erf X" and rezoned Erf 163 into "Consolidated Erf Y".**

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) Infrastructure	The rezoning of land from residential use to industrial or commercial use;	The proposed project includes the rezoning of land from Residential to Business.
Activity 10.1 (b) Infrastructure	The construction of Public roads	The proposed project includes the permanent closure of street portions.
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 permanent closure of street portions.

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 and Tourism: Department of Environmental Affairs (MET: 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

Erven 159, 161, 162, 163, 1941 and 825 (Street), which constitutes the locality of the overall development, are located adjacent to one another in the neighbourhood of Keetmanshoop Proper as depicted in **Figure 1** below.

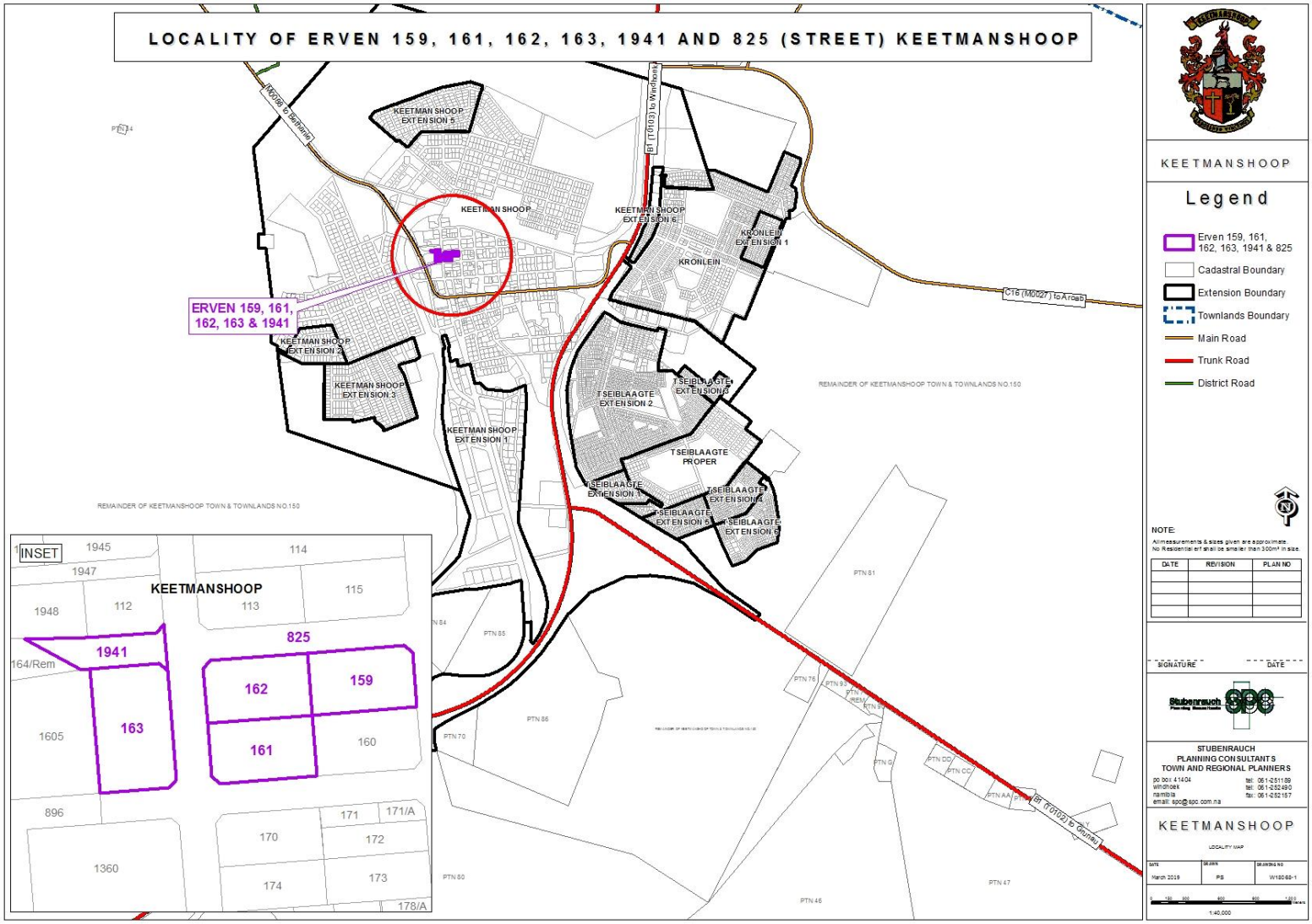


Figure 1: Locality of proposed development in Keetmanshoop

The tables below provide a summary of the subject erven and streets involved in the proposed project.

Erf 159 Keetmanshoop	
Erf Number and property description	Erf 159 Keetmanshoop
Property Owner	N.P.J Coetzee
Property Size and Zoning	2708m² - Business 2

Erf 161 Keetmanshoop	
Erf Number and property description	Erf 161 Keetmanshoop
Property Owner	Keetmanshoop Health Centre
Property Size and Zoning	2707.73m² - Business

Erf 162, Keetmanshoop	
Erf Number and property description	Erf 162, Keetmanshoop
Property Owner	Keetmanshoop Medical Centre
Property Size and Zoning	2708m² respectively - Business

Erf 163, Keetmanshoop	
Erf Number and property description	Erf 163, Keetmanshoop
Property Owner	O' Connel Construction
Property Size and Zoning	m² respectively - Business

Erf 1941, Keetmanshoop	
Erf Number and property description	Erf 1941, Keetmanshoop
Property Owner	Keetmanshoop Municipality
Property Size and Zoning	1496,40 m² respectively - Street

Erf 825, Keetmanshoop	
Erf Number and property description	Erf 825, Keetmanshoop
Property Owner	Keetmanshoop Municipality
Property Size and Zoning	1896,56 m² respectively - Street

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:

- **Consolidation of Erven 159, 161 and 162 into consolidated Erf X, Keetmanshoop;**
- **Consent use to operate and construct an Institutional Building (Private Hospital -that includes ancillary services such as a pharmacy, medical offices and tuck shop.) on the consolidated Erf X (Erven 159, 161 and 162) and the proposed rezoned Erf 163;**
- **Rezoning of Erf 163 Keetmanshoop from "Residential 3" to "Business 2";**
- **Subdivision, Purchase and Closure of Street Portion (Cathedral/8th street);**
- **Consolidation of closed street with "Consolidated Erf X" and rezoned Erf 163 into "Consolidated Erf Y".**

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 Keetmanshoop 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 E**
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

Section	Description	Section of FESR/ Annexure
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 **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	Refer to Chapter 4

Section	Description	Section of FESR/ Annexure
	community that may be affected by the activity;	
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 **Annexure F**

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.	**Activity 5.1 (d) Infrastructure** **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.

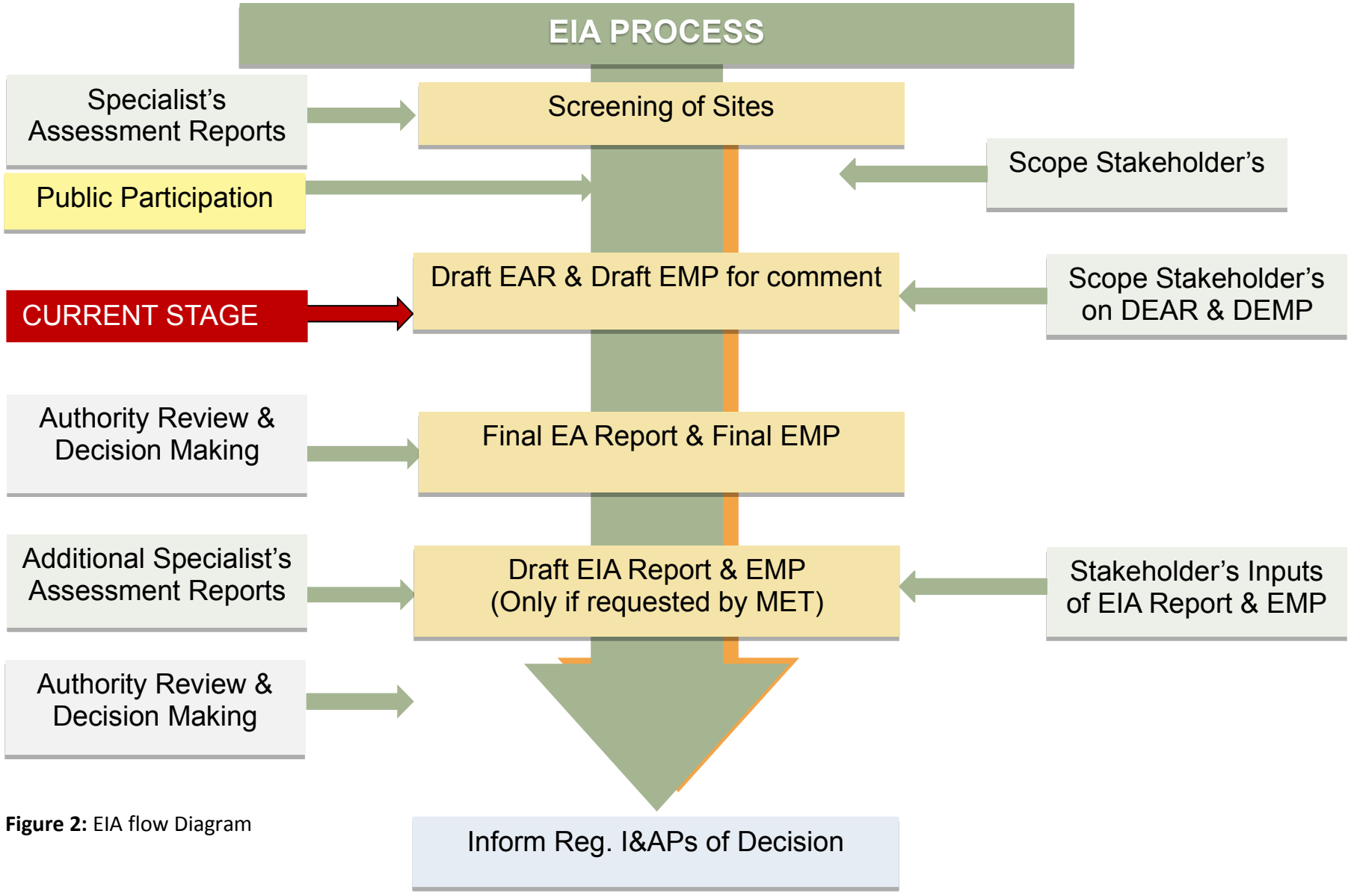


Figure 2: EIA flow Diagram

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 Keetmanshoop Urban Constituency and //Karas Region (Namibia Statistics Agency, 2011)

KEETMANSHOOP URBAN	
ATTRIBUTE	**INDICATOR**
Population	19,447
Females	9,970
Males	9,477
Population under 5 years	11%
Population aged 5 to 14 years	20%
Population aged 15 to 59 years	63%
Population aged 60 years and above	7%
Female: male ratio	95:92
Literacy rate of 15 years old and above	97%
People above 15 years who have never attended school	3%
People above 15 years who are currently attending school	12%
People above 15 years who have left school	83%
People aged 15 years and up who belong to the labour force	72%
Population employed	65%
Homemakers	10%
Students	44%
Income from pension	10%
Income from business and non-farming activities	7%
Income from farming	1%
Income from cash remittance	5%
Wages and salaries	73%
//KARAS REGION	
ATTRIBUTE	
Population	77,421
Rural population	46%
Females	38,014
Males	39,407
Main Language	Afrikaans (36%)

3.1.2 Archaeological and Heritage Context

Keetmanshoop has a rich history and a number of architectural heritage buildings. These buildings form part of the history of the town and the uniqueness of the town which should be protected.

It is unlikely that the proposed project area will have any significant archaeological resources due to the fact that no major historical activity took place within close proximity to the sites. An accidental find procedure may, however, be required in the EMP.

3.2 BIO-PHYSICAL ENVIRONMENT

3.2.1 Air Quality

Air quality in Keetmanshoop urban is characterised to be comparatively good, since there are no current large-scale anthropogenic activities. With any construction activity the creation of fugitive dust will result which may be both a nuisance and a health risk. Dust may be generated by a variety of activities on site but taking the already high background dust levels into consideration, the increase resulting from this activity will be negligible under normal circumstances or when considered in combination with other activities.

3.2.2 Climate

The town of Keetmanshoop is situated in a semi-desert climate, with low rainfall, high evaporation and high day time temperatures. Day time temperatures in summer can reach between 32 - 36 °C. Night time temperatures in winter can get quite cold, with average temperatures between 4-6 °C (Mendelsohn, Jarvis, Roberts & Roberston, 2002). The average daily temperatures rise from about 13.8° C in July to about 26.7° C in January, a difference of 12.9 °C. These two months of December and January also experience the highest maximum temperatures for the year of about 36° C (Mendelsohn *et al.*, 2002).

Average annual evaporation rates for Keetmanshoop are between 2,520 and 2,660 mm per year. The number of days of frost per year is low – between 1 – 5 days of frost per year (Mendelsohn *et al.*, 2002).

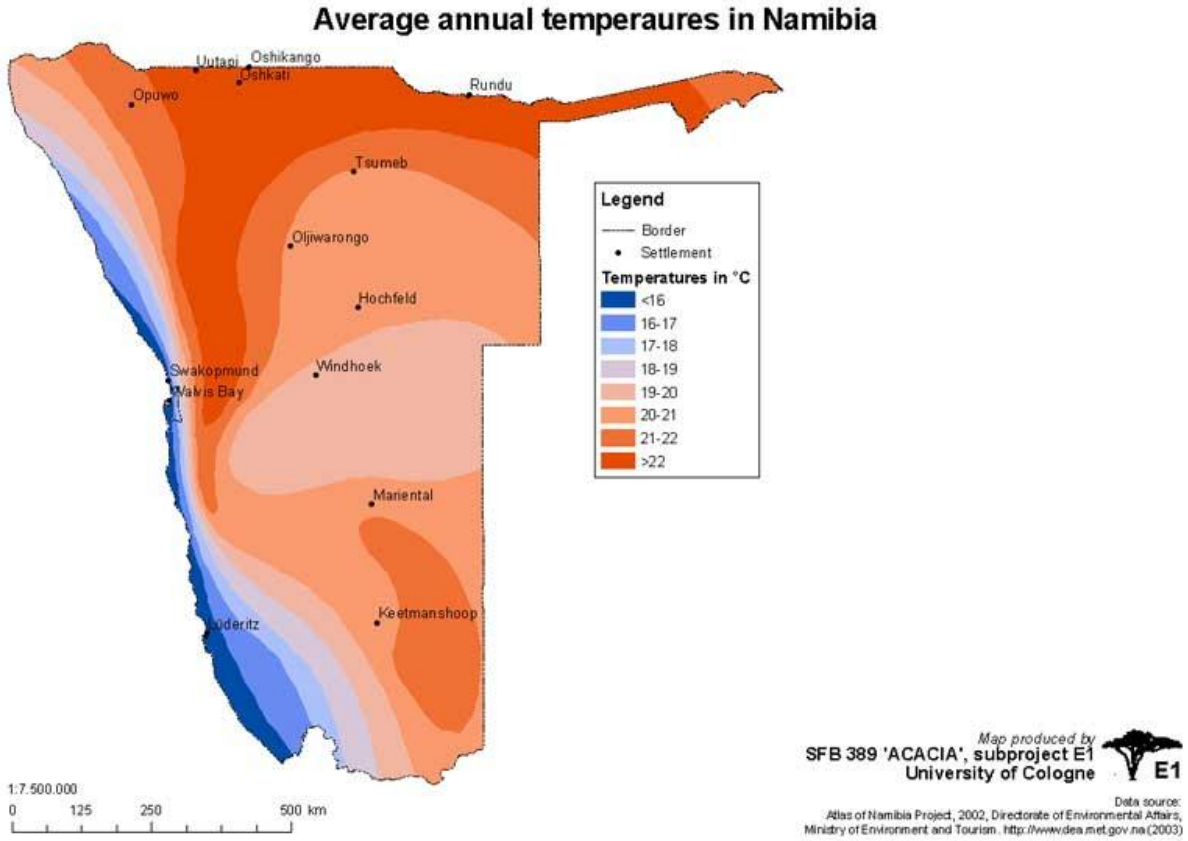


Figure 3: Annual average temperature (Acacia Project E1, n.d.)

Keetmanshoop is relatively dry with an annual average rainfall of between 100 – 150mm per year as indicated in **Figure 4** below. The main problem with the rainfall is that it is highly variable in terms of amount of rainfall and its distribution. The relative humidity for the Keetmanshoop area ranges between 50-60% in the highest humidity times (April) and between 10-20% in time of the least humidity (October) (Mendelsohn *et al.*, 2002).

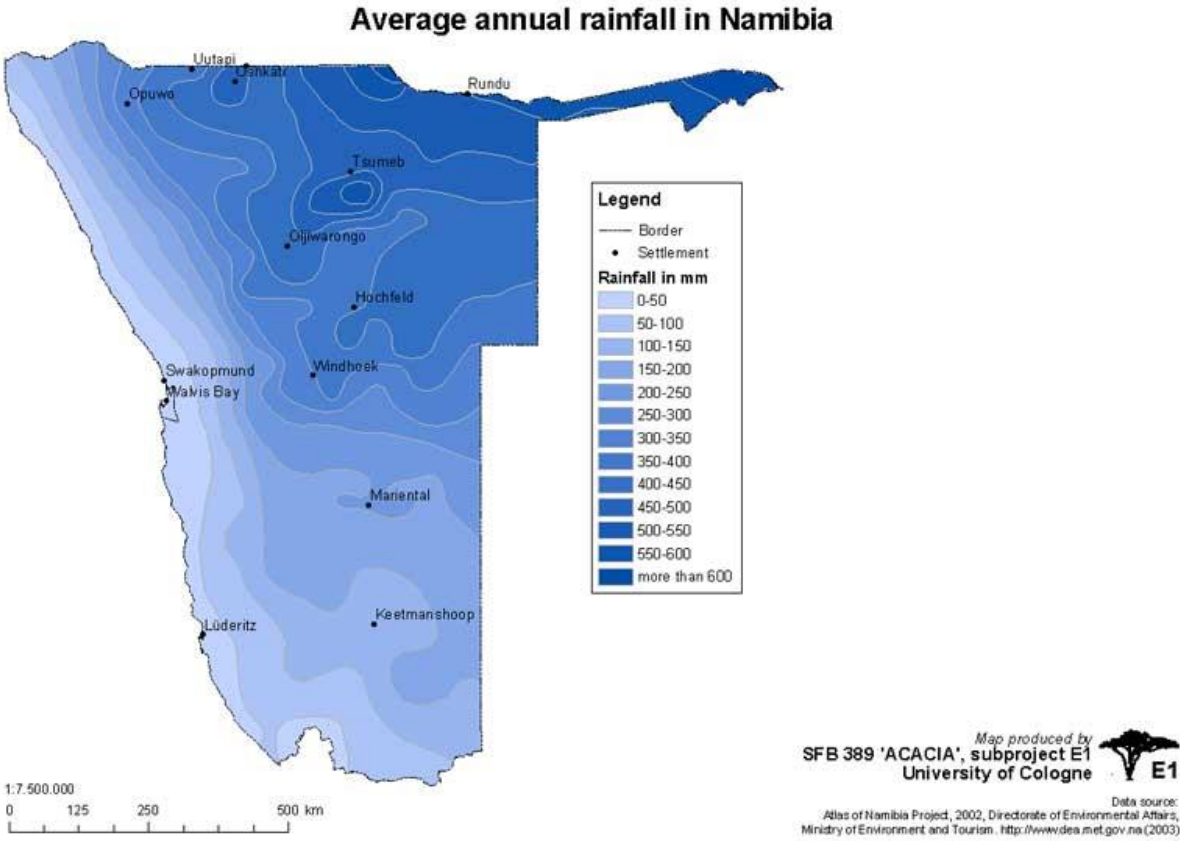


Figure 4: Average annual Rainfall (Acacia Project E1, n.d.)

3.2.3 Topography, Hydrogeology and Geology

Keetmanshoop is situated within the Nama-Karoo Basin, which is a “large, flat lying plateau which dominates much of southern Namibia. Sedimentary rocks deposited in the Nama Basin and later in the same area in the Karoo Basin form the foundations of the landscape. The basin slopes from the north, where elevations are about 1,400 m above sea level, to the south, where altitudes are approximately 900 m above sea level. The Fish, Löwen and Konkiep rivers drain the landscape, all flowing south to the Orange River” (Mendelsohn, 2002).

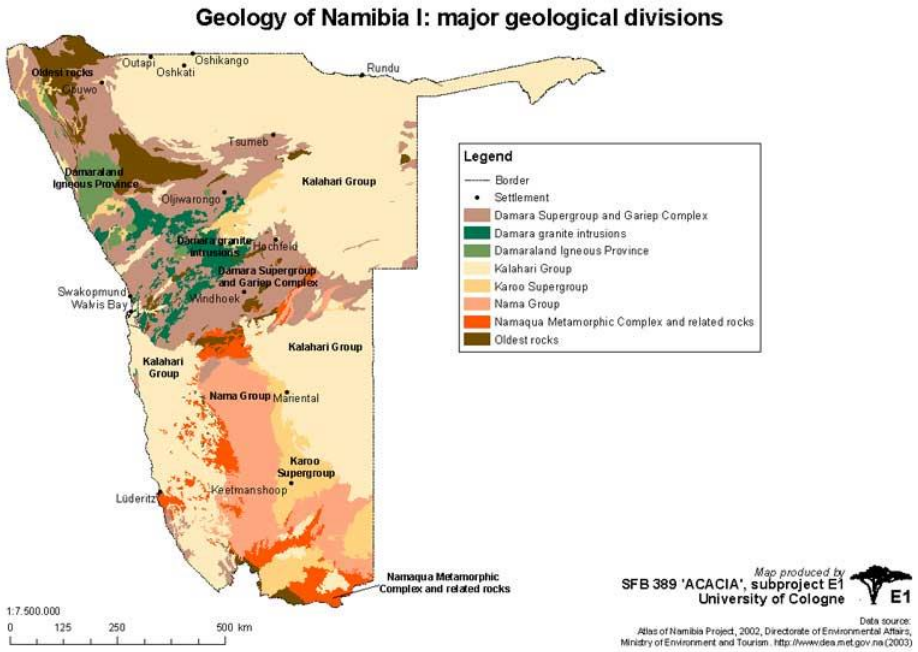


Figure 5: Geology of Namibia (Acacia Project E1, n.d.)

The town of Keetmanshoop and a large part of the //Karas Region falls within the Fish river water basin and Fish River catchment area as depicted in **Figure 6** below. The town itself has a number of smaller ephemeral rivers, the largest being the Skaap River that runs through the eastern part of town, southwards to the Naute dam. These river systems are sensitive areas and care should be taken that developments do not pollute these resources as it will eventually influence the water quality of the town.

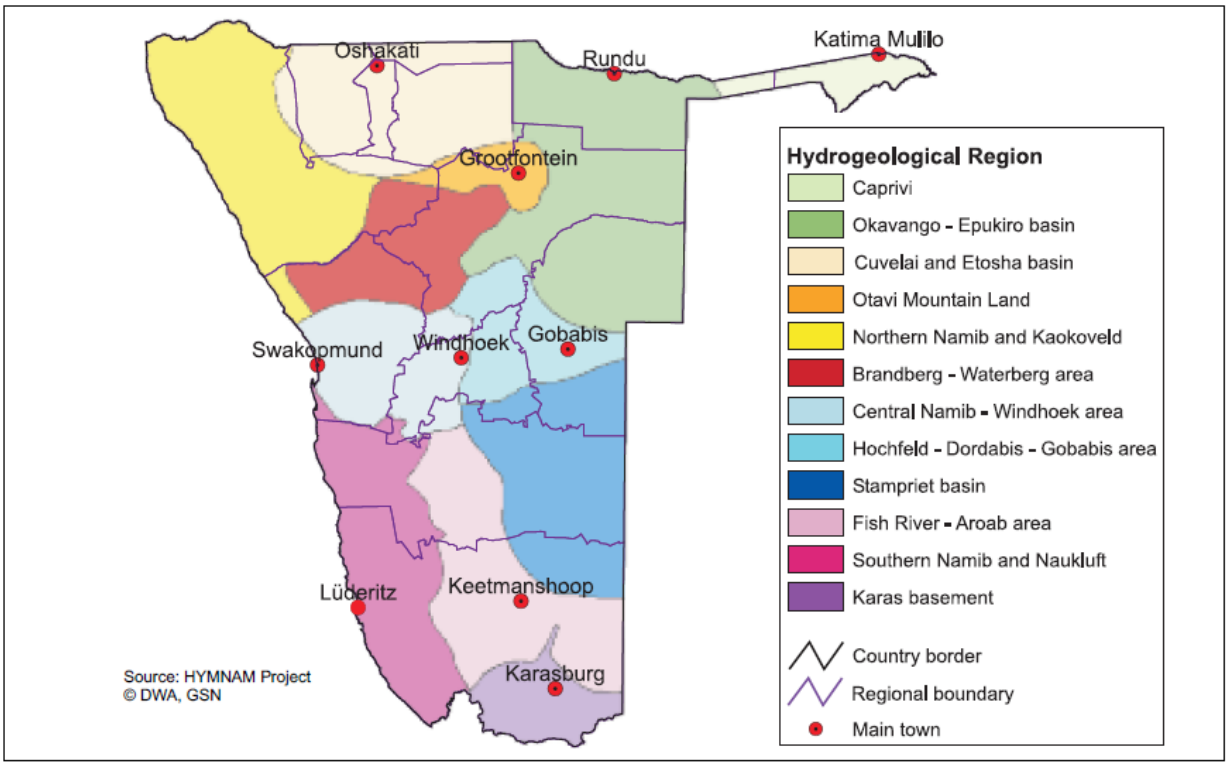


Figure 6: Groundwater basins and hydrogeological regions in Namibia (Ministry of Agriculture Water and Rural Development, 2011)

3.3 TERRESTRIAL ECOLOGY

3.3.1 Flora and Fauna

The vegetation type of Keetmanshoop town falls within the Nama Karoo biome. The Nama Karoo supports a "varied assemblage of plant communities, ranging from deciduous shrub vegetation to perennial grasslands and succulent shrubs. Although dwarfshrubs dominate, there is a wealth of plant species due to the great variety of geological substrates, soils and landforms" (Mendelsohn *et al.*, 2002). The area is characterised by vegetation of the Karas Dwarf Shrub land that is mostly found in Eutric Leptosols and Petric Calcisol soils. The vegetation is dominated by grasslands and low shrubs (Mendelsohn *et al.*, 2002). There is no significant flora found on the proposed site as the site is mostly developed already.

The site is presently developed and as such 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:

- **Consolidation of Erven 159, 161 and 162 into consolidated Erf X, Keetmanshoop;**
- **Consent use to operate and construct an Institutional Building (Private Hospital -that includes ancillary services such as a pharmacy, medical offices and tuck shop.) on the consolidated Erf X (Erven 159, 161 and 162) and the proposed rezoned Erf 163;**
- **Rezoning of Erf 163 Keetmanshoop from "Residential 3" to "Business 2";**
- **Subdivision, Purchase and Closure of Street Portion (Cathedral/8th street);**
- **Consolidation of closed street with "Consolidated Erf X" and rezoned Erf 163 into "Consolidated Erf Y".**

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 proposed street closure, subdivision and consolidation will not take place. This would mean that there would not be suitable site for the development of the proposed hospital and its related activities. As such the residents of Keetmanshoop would not experience the benefits of the proposed hospital and related activities.

4.2.2 Layout Alternative

The proposed street closure will potentially impact traffic within the subject area as the street is one of the main connectivity streets that is earmarked to link Keetmanshoop with Noordhoek in the future. As per the Keetmanshoop Structure Plan (Stubenrauch Planning Consultants, 2015a), the street was identified as an important activity street and connector street which aims to connect various activity nodes, streets and uses (**Figure 7**). The street is identified as having potential for high levels of interaction such as pedestrian activity, cycling and intensified land uses.

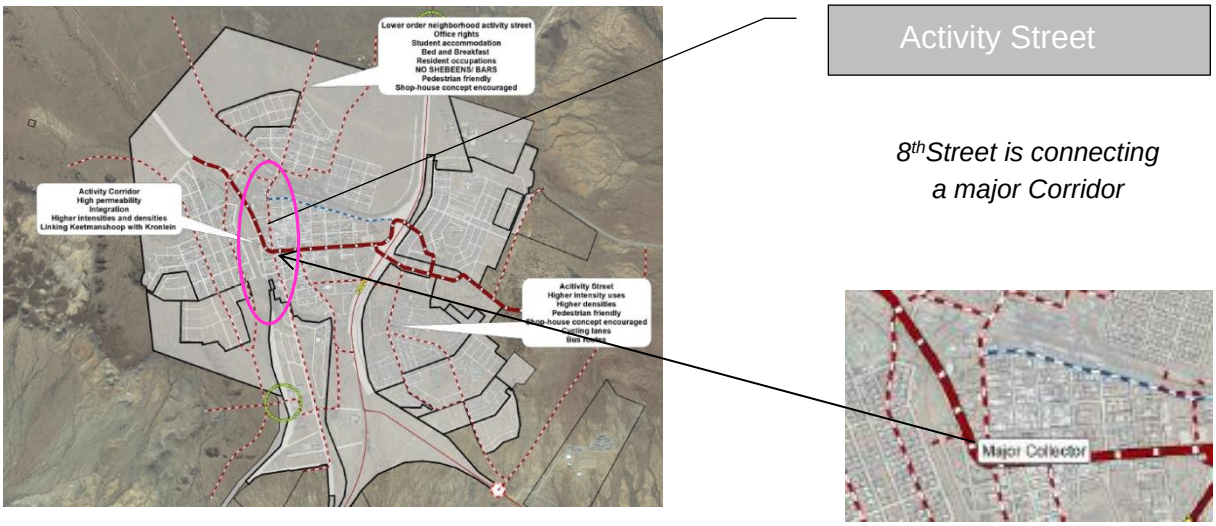


Figure 7: Keetmanshoop Structure Plan Mobility Map (Stubenrauch Planning Consultants, 2015a)

The following alternatives were considered with regards to the closure of street:

- **Alternative 1:** Permanent closure of the street portion – registering a public movement corridor through the closed street portion enabling pedestrian movement and slow traffic movement. The developer would be able to landscape the area and would have to provide traffic sensors to stop moving traffic for hospital vehicles and patients. This would enable a safe space for pedestrians and designated areas for vehicles.

- **Alternative 2:** Linking the development by means of a sky-bridge. An air right servitude would have to be registered over the street (similar to the sky-bridge at Wernhill in Windhoek).

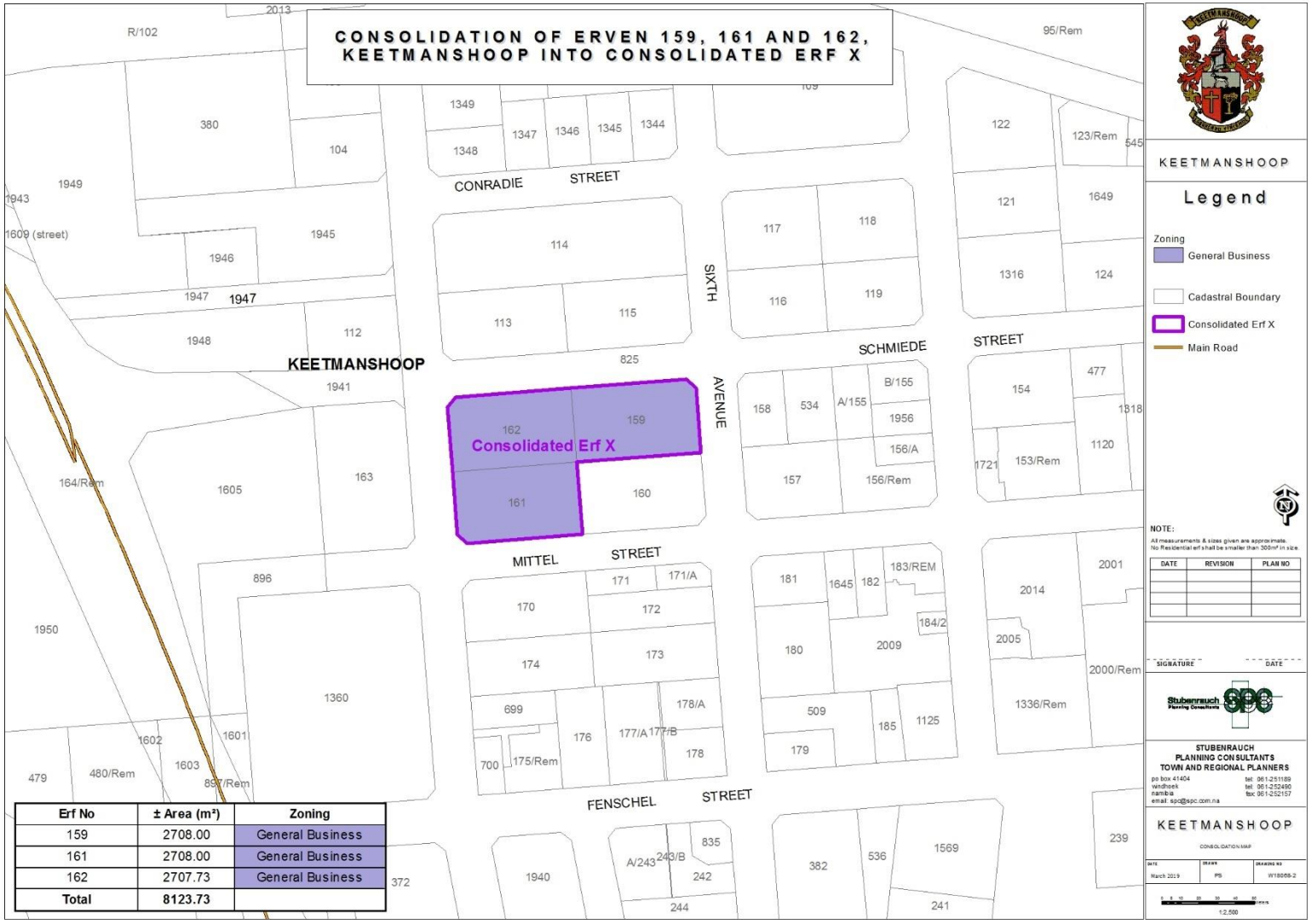
- **Alternative 3:** Permanently close the street portion in order to integrate it into the hospital development in totality.

4.3 THE PROPOSED DEVELOPMENT

It is the intension of the proponent to consolidate Erven 159, 161, 162, 163 and the part of the street between erven 162 and 163, to construct a Private Hospital in Keetmanshoop. Keetmanshoop being the regional centre of the //Karas Region and situated on main traffic corridors is well situated for such a hospital. The town of Keetmanshoop is in need for such facilities and it is expected that the establishment of a private hospital in Keetmanshoop will be greatly beneficial to the Keetmanshoop and regional community in terms of health provision and job creation. The proposed development will offer a health care institution providing patient treatment with specialized medical staff and medical equipment that will be greatly beneficial for patients that currently has to travel to Windhoek in order to receive these specialist treatments. It should be noted that contemporary hospital facilities are supported by pharmacy outlets, medical offices, tuck shop facility and/or medical laboratory services.

Figures 8 to 14 below indicate the statutory steps as outlined below that need to be undertaken in order for the establishment of the proposed hospital:

- **Consolidation of Erven 159, 161 and 162 into consolidated Erf X, Keetmanshoop;**
- **Consent use to operate and construct an Institutional Building (Private Hospital -that includes ancillary services such as a pharmacy, medical offices and tuck shop.) on the consolidated Erf X (Erven 159, 161 and 162) and the proposed rezoned Erf 163;**
- **Rezoning of Erf 163 Keetmanshoop from "Residential 3" to "Business 2";**
- **Subdivision, Purchase and Closure of Street Portion (Cathedral/8th street);**
- **Consolidation of closed street with "Consolidated Erf X" and rezoned Erf 163 into "Consolidated Erf Y".**



Erf No	± Area (m²)	Zoning
159	2708.00	General Business
161	2708.00	General Business
162	2707.73	General Business
Total	8123.73	

Figure 8: Consolidation of Erven 159, 161 and 162, Keetmanshoop into Consolidated Erf X

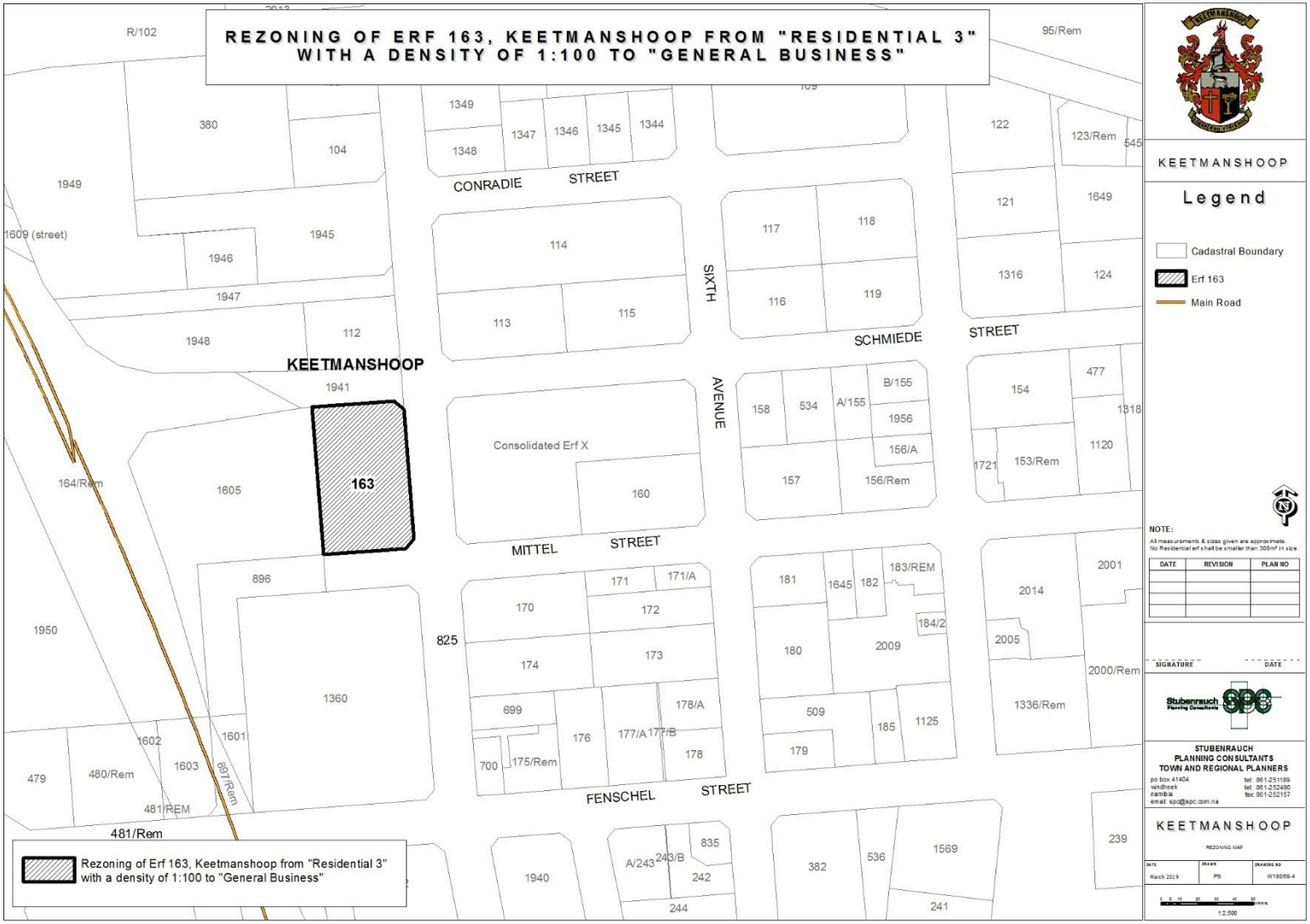
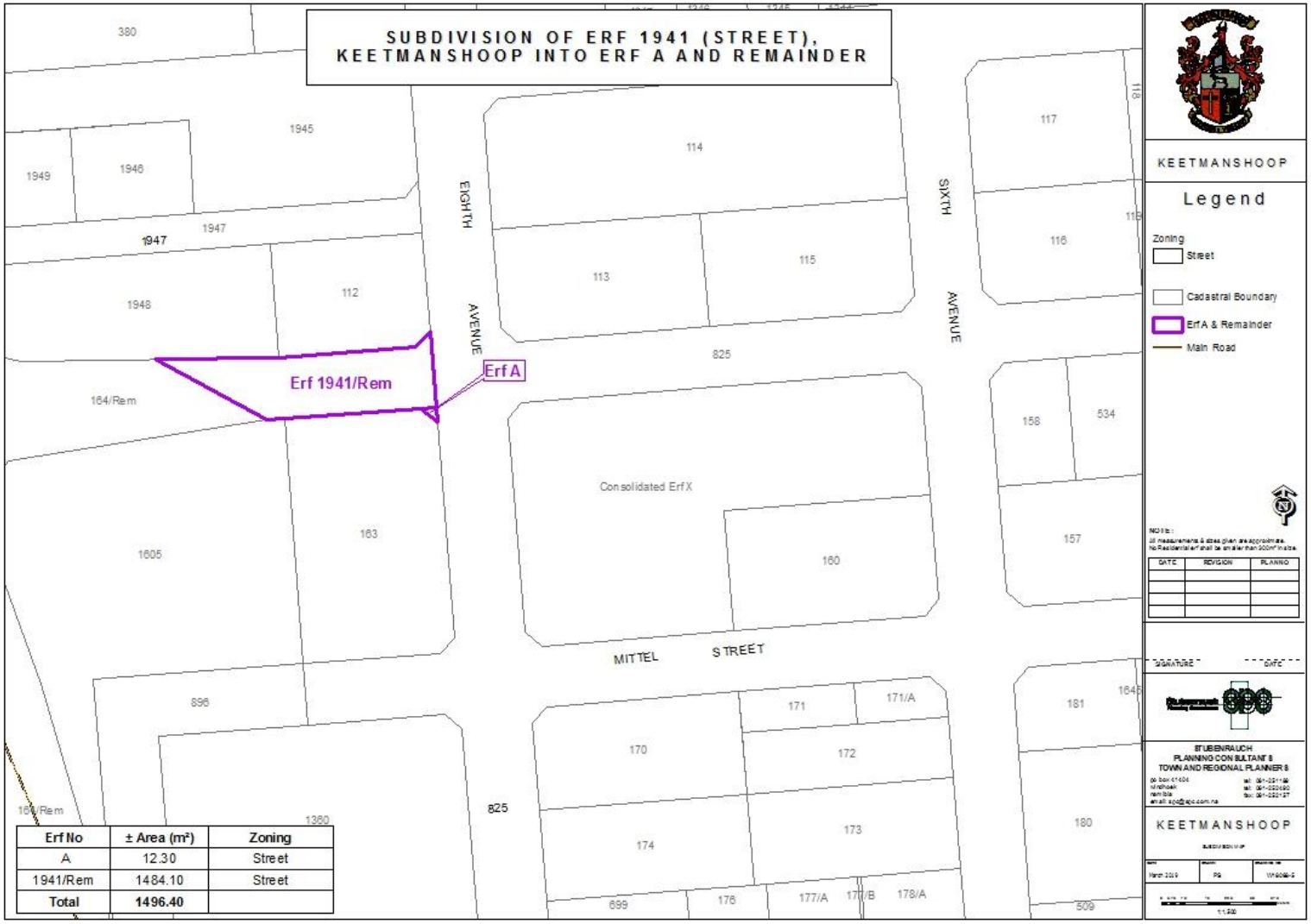


Figure 9: Rezoning of Erf 163, Keetmanshoop from Residential 3 to General Business



Erf No	± Area (m²)	Zoning
A	12.30	Street
1941/Rem	1484.10	Street
Total	1496.40	

Figure 10: Subdivision of Erf 1941 (Street), Keetmanshoop into Erf A and Remainder

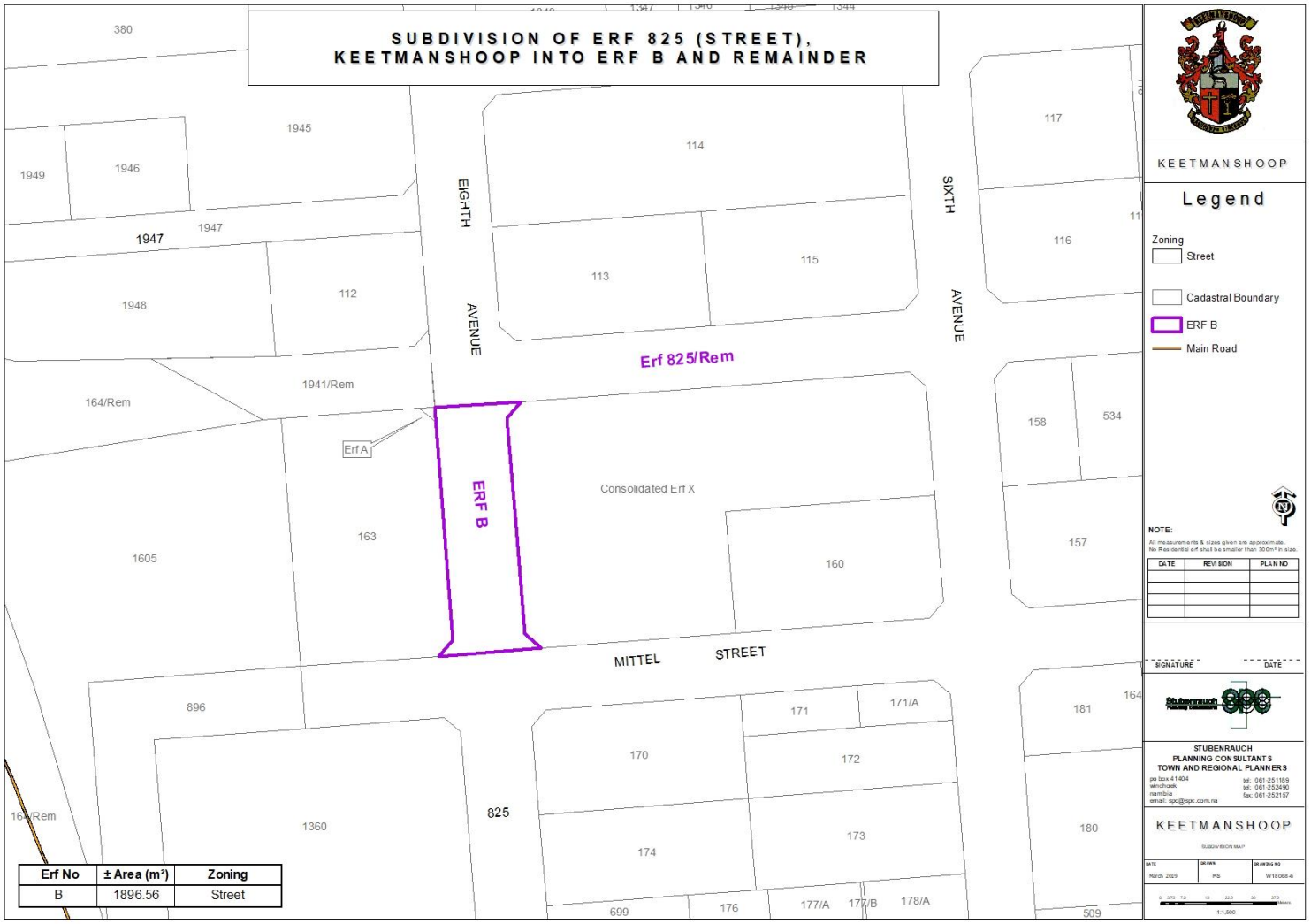


Figure 11: Subdivision of Erf 825 (Street), Keetmanshoop into Erf B and Remainder

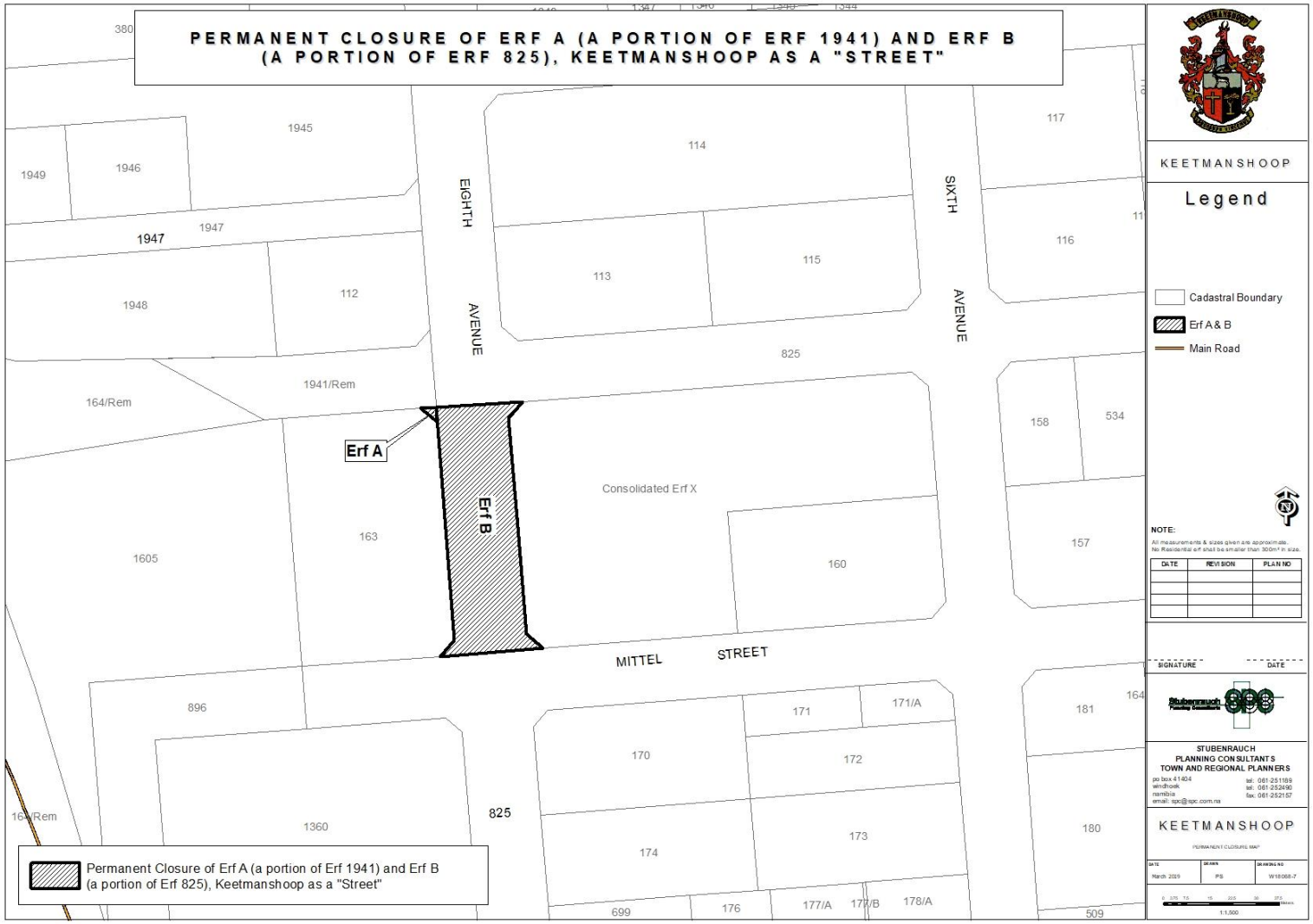
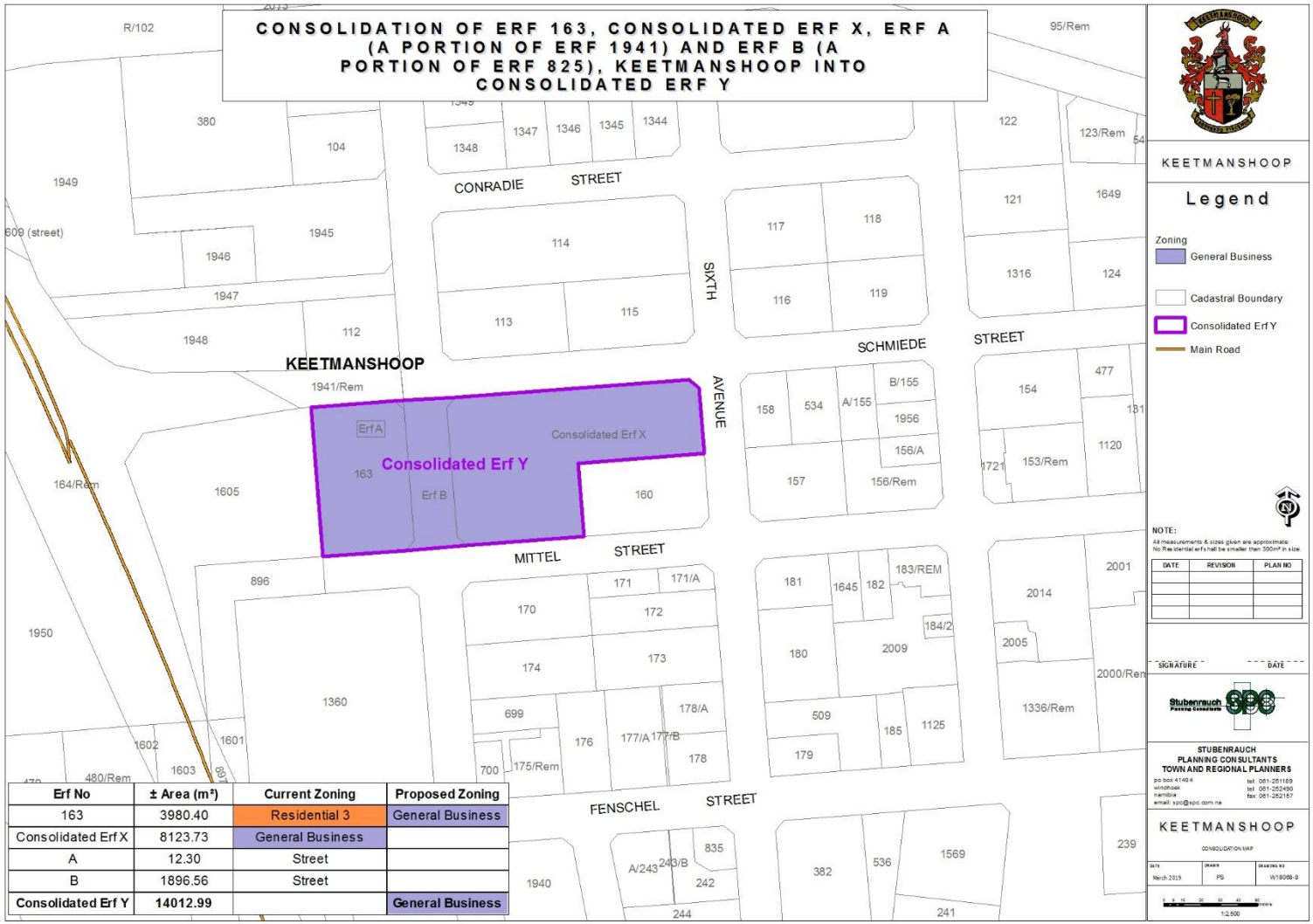


Figure 12: Permanent Closure of Erf A (A Portion of Erf 1941) and Erf B (A Portion of Erf 825), Keetmanshoop as Street



Erf No	± Area (m²)	Current Zoning	Proposed Zoning
163	3980.40	Residential 3	General Business
Consolidated Erf X	8123.73	General Business	
A	12.30	Street	
B	1896.56	Street	
Consolidated Erf Y	**14012.99**		**General Business**

Figure 13: Consolidation of Erf 163, Consolidated Erf X, Erf A (a Portion of Erf 1941) and Erf B (a Portion of Erf 825), Keetmanshoop into Consolidated Erf Y

Figure 14: Aerial map of the Consolidation of Erf 163, Consolidated Erf X, Erf A (a Portion of Erf 1941) and Erf B (a Portion of Erf 825), Keetmanshoop into Consolidated Erf Y

The proposed street closure will potentially impact traffic within the subject area as the street is one of the main connectivity streets that is earmarked to link Keetmanshoop with Noordhoek in the future. As per the Keetmanshoop Structure Plan, the street was identified as an important activity street and connector street which aims to connect various activity nodes, streets and uses. The street is identified as having potential for high levels of interaction such as pedestrian activity, cycling and intensified land uses.

4.3.1 Engineering Services

Bulk water in Keetmanshoop is supplied by Namwater via the Naute Scheme. According to Namwater the Naute Scheme has enough water for future developments considering future upgrades to the bulk infrastructure as well as municipal reticulation to reduce water losses (Stubenrauch Planning Consultants, 2015b). In terms of the CSIR (2005) the expected water demand for a hospital is estimated to be 220-300 litres/bed/day. Hospitals do require a sufficient amount of water during operation, as such it is essential that a Water Management Plan be developed to ensure the efficient and sustainable use of water in the facility.

Electricity is supplied to the town by Nampower via the distribution lines from Kokerboom station with the main distribution line being a 66kV overhead line to the western substation.

The sewage treatment plant of Keetmanshoop is situated south of the town. In terms of the Keetmanshoop Structure plan (2015) the sewage treatment facility has enough capacity for future developments.

Erven 159, 161 and 162, Keetmanshoop are located in an already developed part of Keetmanshoop and is connected to the existing municipal reticulation network of the Municipality. It is anticipated that these services will be sufficient to support future development of the proposed Erf X. The local authority is however advised to determine the position of any bulk service lines, especially if the street is to be permanently closed.

4.3.2 Access Provision

Erven 159, 161 and 162, Keetmanshoop will receive access from the existing access points along 8th Street and Schiede Street the newly created Erf X will continue to receive access from the existing access points.

Erf 163, Keetmanshoop will receive access from the existing access points along 8th Street and Schiede Street.

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 **19 February 2020 to 11 March 2020.**

Table 5: Table of Public Participation Activities

ACTIVITY	REMARKS
Placement of site notice in Keetmanshoop	See **Annexure A**
Placing advertisements in two newspapers namely the New Era and The Sun (19 February and 26 February 2020)	See **Annexure B**
Written notice to surrounding property owners and Interested and Affected Parties via Email (19 February 2020)	See **Annexure C**

5.1.1 Environmental Assessment Phase 2

The second phase of the PPP involves 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 May 2020**. An Executive Summary of the DESR was also included in the letters to the registered I&APs. I&APs had until **29 May 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 above 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 15: Mitigation Hierarchy

There is a mitigation hierarchy of actions which can be undertaken to respond to any proposed project or activity (See **Figure 15** 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 MET: DEA for consideration. In turn, MET: 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 already connected to the municipal reticulation network of Keetmanshoop. 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. Given that this is a new development of its kind in the area the increase in service demand are expected to be medium in significance.

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 as such no significant impacts on biodiversity are anticipated for the proposed activity.

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.

7.2.2 Waste Generation

During construction, waste may be generated on site which would have to be disposed of at an approved landfill site.

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. 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

Due to the demand for construction workers during the construction of the proposed project an influx of migrant workforce who will require temporary accommodation in Keetmanshoop might be experienced. Experience with other construction projects in a developing-world context has shown that, where migrant construction workers have the opportunity to interact with the local community, a significant risk is created for the development of social conditions and sexual behaviors that contribute to the spread of HIV and AIDS.

In response to the threat the pandemic poses, MET has developed a policy on HIV and AIDS. This policy, which was developed with support from USAID, GTZ and the German Development Fund, provides for a non-discriminatory work environment and for workplace programs managed by a Ministry-wide committee. The MET has also recently initiated a programme aimed at mainstreaming HIV and gender issues into environmental impact assessments.

7.3.3 Traffic Impacts

Impacts on traffic are anticipated due to the proposed street to be closed being identified as a major activity corridor in the town. Traffic is thus 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 expected to increase in the area as one of the main connectivity streets that is earmarked to link Keetmanshoop with Noordhoek in the future will be closed for utilisation by vehicles and pedestrians. As such the proposed impact is anticipated to be of medium significance.

7.4.2 Waste Generation

Waste will be generated during the operation of the hospital. This will include medical waste as well as domestic waste. It is essential that a waste management plan be developed to ensure that the different kinds of waste being generated on site will be disposed of in an appropriate manner and according to standard and in line with regulations.

7.4.3 Visual Impacts

The development of the hospital may result in a change in visual characteristics of the site as there will be new buildings developed on the site. 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 Keetmanshoop could benefit from employment during construction and possibly by the activities taking place 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 F** 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	Keetmanshoop Private Hospital	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										
2. Biodiversity (Fauna and Flora)	Keetmanshoop Private Hospital	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
		Mitigation	Local	Neutral	Short term	Neutral	Probable	Certain	Reversible	Neutral
3. Surface & ground water	Keetmanshoop Private Hospital	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

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. Waste Generation	Keetmanshoop Private Hospital	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
5. Heritage	Keetmanshoop Private Hospital	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
6. Health, safety and security	Keetmanshoop Private Hospital	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

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
7. Traffic impacts	Keetmanshoop Private Hospital	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
8. Noise impacts	Keetmanshoop Private Hospital	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
9. Dust & emissions impacts	Keetmanshoop Private Hospital	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
10. Municipal services	Keetmanshoop Private Hospital	No mitigation	Local	Low	Short term	Low	Probable	Certain	Reversible	Low (-ve)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
		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
11. Disturbance to surrounding residents	Keetmanshoop Private Hospital	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
12. Hazardous Substances	Keetmanshoop Private Hospital	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. Waste	Keetmanshoop Private Hospital	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)

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
OPERATIONAL PHASE										
1. Visual & sense of place	Keetmanshoop Private Hospital	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	Keetmanshoop Private Hospital	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
3. Noise	Keetmanshoop Private Hospital	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)

Description of potential impact	Project alternative	No mitigation / mitigation	Extent	Magnitude	Duration	SIGNIFICANCE	Probability	Confidence	Reversibility	Cumulative impact
	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	Keetmanshoop Private Hospital	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	Keetmanshoop Private Hospital	No mitigation	Local	Medium	Long term	Medium (+)	Probable	Probable	Reversible	High (+)
	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. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• 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. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• 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. • 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.

CONSTRUCTION PHASE IMPACTS	
Impact	**Mitigation Measures**
	• 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. • 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. • 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 MET: 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 MET: DEA could be enforced as Conditions of Approval in the Environmental Authorisation, should MET: 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 MET: DEA for consideration and decision making. If MET: 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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