PROPOSED
LIMPOPO CENTRAL HOSPITAL

DRAFT SCOPING REPORT

JULY 2019

PREPARED FOR: NATIONAL DEPARTMENT OF HEALTH

NEMAI CONSULTING

Environmental, Social and OHS Consultants

P.O. Box 1673
Sunninghill
2157
South Africa

147 Bram Fisher Drive
Ferndale
2194
South Africa

Tel: +27 11 781 1730
Fax: +27 11 781 1731
www.nemai.co.za

Title and Approval Page

Project Name:	Proposed Limpopo Central Hospital
Report Title:	Draft Scoping Report
Authority Reference:	Not assigned yet
Report Status	Draft

Applicant:	National Department of Health

Prepared By:	Nemai Consulting			
NEMAI CONSULTING	☎	+27 11 781 1730	🏠	147 Bram Fischer Drive, FERNDALE, 2194
	🖷	+27 11 781 1731		
	✉	info@nemai.co.za	🖃	PO Box 1673, SUNNINGHILL, 2157
	🌍	www.nemai.co.za		
Report Reference:	10611-Limpopo Central Hospital Scoping Report (Draft)			R-PRO-REP|20170216

Authors:
C. van der Hoven and J. Davis

Amendments Page

Date:	Nature of Amendment	Amendment Number:
12/07/2019	Draft for Review by Authorities and the Public	00

Executive Summary

This document serves as the Draft Scoping Report (DSR) for the proposed Limpopo Central Hospital, situated in the Limpopo Province.

Project Background and Motivation

Public health infrastructure is a fundamental pillar to building a successful national health insurance programme. However, according to the National Service Delivery Agreement, the current public health infrastructure cannot adequately support the service delivery needs of the country. Health facility planning, including providing new hospitals and clinics and upgrading established facilities, needs to be expedited to increase citizen's access to a high standard of health care facilities. The fact that there is a significant shortage of skilled practitioners and health care workers in South Africa exacerbates the situation. Currently, the existing medical schools are unable to produce the requisite number of health professionals. If the country is to meet the requirements of the National Health Insurance (NHI) goals of more equitable access to high-quality health services for all South Africans, both the academic component and health service provisioning must be improved.

Project Description

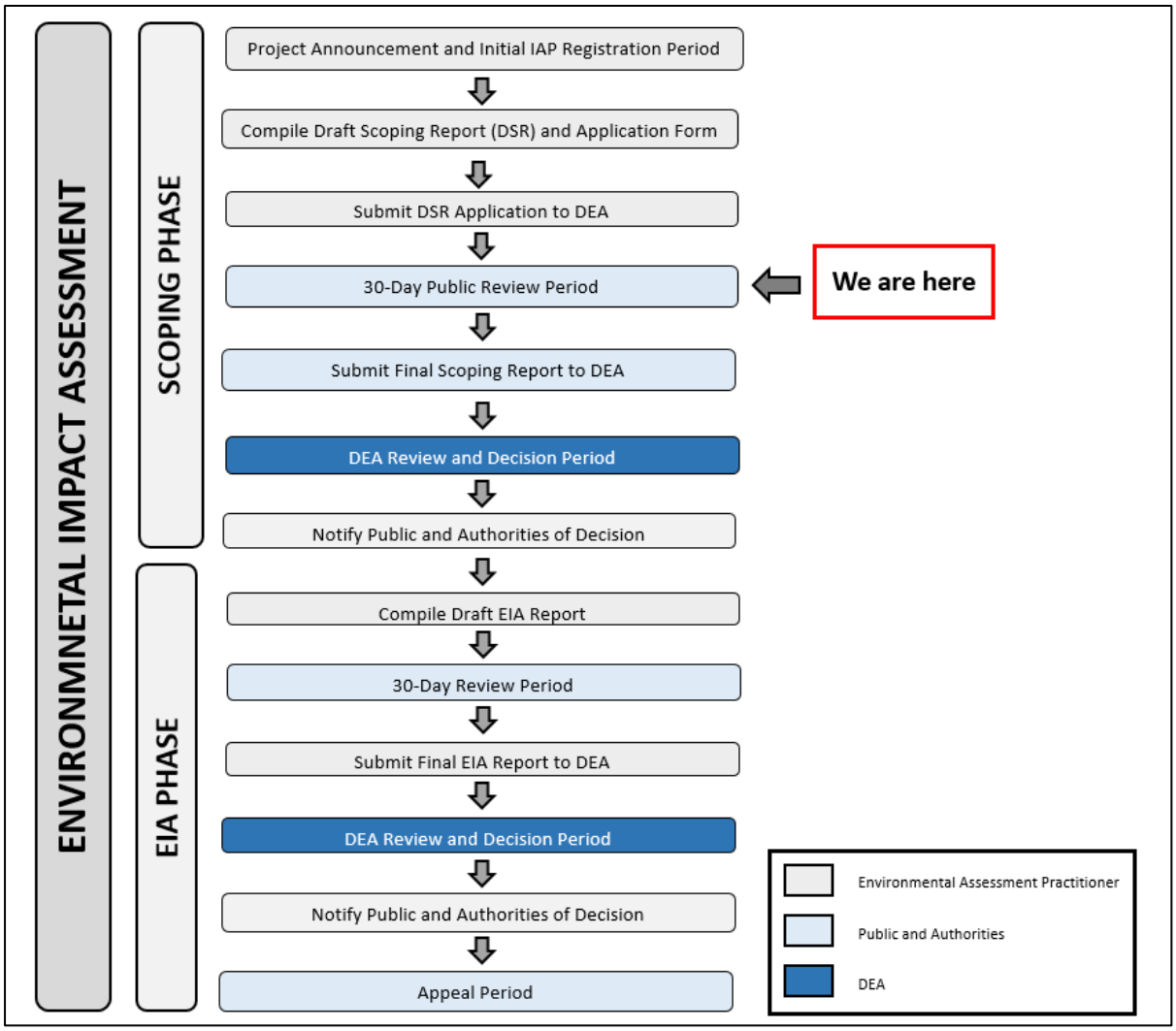
The building of a proposed new 488 bed central hospital, Limpopo Central Hospital (LCH), on a new site in Polokwane that will provide the tertiary care for the province and which will be the major teaching hospital for the University of Limpopo Faculty of Health Sciences and School of Medicine. The proposed Limpopo Central Hospital is situated within the Limpopo Province. The proposed project footprint falls within the jurisdiction of the Capricorn District Municipality (DM), and the Polokwane Local Municipality (LM). The proposed Limpopo Central Hospital is currently situated between Edupark, the Northern Academy Secondary School and the N1 road. The proposed site is located on the remainder of Erf 6861 of Pietersburg Extension 30.

Legislative Framework

The pertinent environmental legislation that has bearing on the proposed development is considered. A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity, and which will be considered in the Environmental Impact Assessment (EIA) Process.

Scoping and EIA Process

The process for seeking authorisation under the National Environmental Management Act (No. 107 of 1998) is undertaken in accordance with Government Notice No. R. 982 of 4 December 2014 (as amended on 7 April 2017), promulgated in terms of Chapter 5 of this Act. Based on the types of activities involved the requisite environmental assessment for the project is a Scoping and Environmental Impact Assessment process. An outline of the process is provided in the diagram to follow.



Outline of Scoping and Environmental Impact Assessment Process

In terms of the National Environmental Management Act (No. 107 of 1998) the lead decision-making authority for the environmental assessment is the Department of Environmental Affairs, as the project proponent (Department of Health) is a national department. Nemai Consulting was appointed by the Sakhiwo Health Solutions as the independent Environmental Assessment Practitioner (EAP) to undertake the environmental assessment for the proposed Limpopo Central Hospital.

Profile of the Receiving Environment

The Scoping Report provides a general description of the status quo of the receiving environment in the project area. This serves to provide the context within which the Scoping exercise was conducted. It also allows for an appreciation of sensitive environmental features and possible receptors of the effects of the proposed project. A brief overview is also provided of the manner in which the environmental features may be affected (positively or negatively) by the proposed project.

The receiving environment is assessed and discussed in terms of the following:

- Land Use and Land Cover;
- Climate;
- Geology;
- Geohydrology;
- Soils;
- Topography;
- Surface Water;
- Terrestrial Ecology;
- Socio-Economic Environment;
- Agriculture;
- Air quality;
- Noise;
- Historical and Cultural Features;
- Planning;
- Existing Structures and Infrastructure;
- Transportation;
- Aesthetic Qualities; and
- Tourism.

Public Participation

The public participation process followed for the proposed project is governed by NEMA and GN No. R. 982 of the 2014 EIA Regulations (as amended). The public participation process conducted to date as well as the details on the public participation review period for the DSR are discussed.

Impact Assessment

In accordance with the purpose of the Scoping exercise, as part of the overall environmental assessment, this section aims to identify potentially significant environmental issues for further consideration and prioritisation during the EIA Phase. This allows for a more efficient and focused impact assessment in the ensuing EIA Phase, where the analysis is largely limited to significant issues and reasonable alternatives.

Plan of Study

The Plan of Study explains the approach to be adopted to conduct the EIA for the proposed Limpopo Central Hospital. This includes a summary of the key environmental issues, Specialist Studies, public participation and proposed timeframes.

Table of Contents

1 DOCUMENT ROADMAP - 1 -

2 PURPOSE OF THE DOCUMENT - 6 -

3 ENVIRONMENTAL ASSESSMENT PRACTITIONER - 7 -

4 PROJECT BACKGROUND AND MOTIVATION - 8 -

5 PROJECT LOCATION - 11 -

5.1 Geographical Context - 11 -
5.2 Proposed Site - 12 -

6 PROJECT ALTERNATIVES - 14 -

6.1 Options Analysis - 14 -
6.2 Project Alternatives - 15 -
6.3 Layout Alternatives - 17 -
6.4 No-go Alternative - 17 -

7 PROJECT DESCRIPTION - 18 -

7.1 Scope of Work - 18 -
7.2 Project Life-Cycle - 25 -
7.3 Resources Required for Construction and Operation - 27 -

8 LEGISLATION AND GUIDELINES CONSIDERED - 31 -

8.1 Legislation - 31 -
8.2 Guidelines - 40 -
8.3 National and Regional Plans - 40 -

9 SCOPING AND EIA PROCESS - 40 -

9.1 2014 EIA Listed Activities (as amended) - 40 -
9.2 Formal Process - 41 -
9.3 Competent Authority - 41 -
9.4 Application Form - 41 -
9.5 Scoping Phase - 42 -
9.6 EIA Phase - 42 -
9.7 Landowner Consent - 43 -

10 ASSUMPTIONS AND LIMITATIONS - 43 -

11 NEED AND DESIRABILITY - 44 -

12 PROFILE OF THE RECEIVING ENVIRONMENT - 46 -

12.1 General - 46 -
12.2 Land Use & Land Cover - 47 -
12.3 Climate - 48 -
12.4 Geology - 49 -
12.5 Soils - 50 -
12.6 Geohydrology - 52 -
12.7 Topography - 53 -
12.8 Surface Water - 54 -
12.9 Flora - 56 -
12.10 Fauna - 66 -
12.11 Socio-Economic Environment - 68 -
12.12 Land Capability - 74 -
12.13 Air Quality - 75 -
12.14 Noise - 76 -
12.15 Historical and Cultural Features - 76 -
12.16 Planning - 78 -
12.17 Existing Structures and Infrastructure - 80 -
12.18 Transportation - 81 -
12.19 Waste Disposal Facilities - 82 -
12.20 Aesthetic Qualities - 84 -

13 PUBLIC PARTICIPATION - 85 -

13.1 General - 85 -
13.2 Database of IAPs - 85 -
13.3 Project Announcement Phase - 86 -
13.4 Review of Draft Scoping Report - 87 -

14 POTENTIAL ENVIRONMENTAL IMPACTS OR ISSUES - 88 -

14.1 Approach - 89 -
14.2 Summary of Potentially Significant Environmental Issues - 90 -
14.3 Cumulative Impacts - 92 -

15 METHODOLOGY TO ASSESS THE IDENTIFIED IMPACTS - 94 -

16 PLAN OF STUDY FOR EIA - 95 -

16.1 Key Environmental Issues Identified During Scoping Phase - 95 -

16.2 Feasible Alternatives to be assessed during EIA Phase - 95 -
16.3 Specialist Studies - 95 -
16.4 Public Participation – EIA Phase - 102 -
16.5 EIA Report - 102 -
16.6 Authority Consultation - 104 -
16.7 EIA Timeframes - 104 -

17 OATH OF THE EAP AND DECLARATION OF INDEPENDENCE _____ - 105 -

18 REFERENCES _____ - 106 -

List of Tables

Table 1: Scoping Report Roadmap ..... - 1 -
Table 2: Scoping and EIA core team members ..... - 7 -
Table 3: Environmental Statutory Framework ..... - 31 -
Table 4: EIA Listed Activities triggered by the proposed development ..... - 34 -
Table 5: Need and Desirability for the Proposed Limpopo Central Hospital ..... - 44 -
Table 6: Temperature in Polokwane LM ..... - 48 -
Table 7: General description of CBA map categories ..... - 60 -
Table 8: Red Data plant species recorded in grid 2329 CD ..... - 64 -
Table 9: Definitions of Red Data Status ..... - 65 -
Table 10: Mammal species recorded in the grid cell 2329CD (ADU, 2019) ..... - 66 -
Table 11: Red Data Listed bird species which could potentially occur on site (SABAP2) - 67 -
Table 12: Amphibian species recorded which could occur in the study area ..... - 68 -
Table 13: Population Group (Statistics South Africa, 2013) ..... - 69 -
Table 14: Gender Distribution (Statistics South Africa, 2013) ..... - 69 -
Table 15: Languages (Statistics South Africa, 2013) ..... - 69 -
Table 16: Highest Education Level (Statistics South Africa, 2013) ..... - 70 -
Table 17: Employment status (Statistics South Africa, 2013) ..... - 70 -
Table 18: Settlement Type (Statistics South Africa, 2013) ..... - 70 -
Table 19: Annual household income (Statistics South Africa, 2013) ..... - 70 -
Table 20: Access to water (Statistics South Africa, 2013) ..... - 71 -
Table 21: Toilet Facilities (Statistics South Africa, 2013) ..... - 71 -
Table 22: Energy or fuel for cooking, heating and lighting (Statistics South Africa, 2013) - 72 -
Table 23: Health Care Facilities within Polokwane LM ..... - 72 -
Table 24: Refuse disposal (Statistics South Africa, 2013) ..... - 73 -
Table 25: Palaeontological Sensitivity Classification Table (SAHRIS) ..... - 77 -
Table 26: Locations of site notices ..... - 86 -
Table 27: Locations for the review of Draft Scoping Report ..... - 87 -
Table 28: Potential environmental issues for prioritisation during the EIA phase ..... - 90 -

Table 29: EIA Timeframes ..... - 104 -

List of Figures

Figure 1: National, provincial and municipal map - 11 -
Figure 2: Cadastral map (based on 2017 cadastral information) - 12 -
Figure 3: On-site Photos - 12 -
Figure 4: Google Earth locality map - 13 -
Figure 5: 3D perspective views of the Proposed Limpopo Central Hospital - 19 -
Figure 6: Master plan - 20 -
Figure 7: Lower ground floor concept design - 21 -
Figure 8: Ground floor concept design - 22 -
Figure 9: First floor concept design - 23 -
Figure 10: Second floor concept design - 24 -
Figure 11: Proposed Power Supply - 29 -
Figure 12: Scoping and EIA Process - 41 -
Figure 13: Land Cover Map (GEOTERRAIMAGE) - 47 -
Figure 14: Precipitation in Polokwane LM - 48 -
Figure 15: Geology Map - 49 -
Figure 16: Soil Classes Map - 51 -
Figure 17: Borehole Locality Map (AGES, 2010b) - 52 -
Figure 18: Contour Map (20m interval) - 53 -
Figure 19: Google Earth Elevation Profile (West to East) - 54 -
Figure 20: Limpopo WMA and quaternary catchments - 54 -
Figure 21: Surface Water Map - 55 -
Figure 22: Savanna Biome Map - 56 -
Figure 23: Vegetation Type Map - 57 -
Figure 24: Threatened Ecosystems Map - 58 -
Figure 25: Limpopo Conservation Plan Map - 59 -
Figure 26: Protected Areas Map - 64 -
Figure 27: Important Bird Areas Map - 67 -
Figure 28: Land Claims (Capricorn IDP, 2016) - 73 -
Figure 29: Land Capability Map - 75 -
Figure 30: Palaeontological (Fossil) Sensitivity Map (SAHRIS) - 77 -
Figure 31: Capricorn DM SDF (Capricorn IDP, 2016) - 79 -
Figure 32: Polokwane LM SDF - 80 -
Figure 33: Existing infrastructure surrounding proposed site - 81 -
Figure 34: Major Transportation Network Map - 82 -
Figure 35: Waste Infrastructure (Polokwane IWMP, 2016) - 83 -
Figure 36: Illegal dumping activities on site (left) and general appearance of site (right) - 84 -
Figure 37: Outline of Public Participation Process - 85 -

List of Appendices

APPENDIX A: CV OF EAP

APPENDIX B: LOCALITY MAP

APPENDIX C: TECHNICAL DRAWINGS

APPENDIX D: DEA APPLICATION FORM

APPENDIX E: PUBLIC PARTICIPATION – ANNOUNCEMENT PHASE

- **APPENDIX E1**: DATABASE OF AUTHORITIES, STAKEHOLDERS AND IAPS
- **APPENDIX E2**: BACKGROUND INFORMATION DOCUMENTS (BIDS)
- **APPENDIX E3**: PROOF OF SITE NOTICES
- **APPENDIX E4**: PROOF OF NEWSPAPER ADVERTISEMENTS
- **APPENDIX E5**: PROOF OF NOTIFICATION
- **APPENDIX E6**: REPLY FORMS AND COMMENTS RECEIVED

APPENDIX F: PUBLIC PARTICIPATION – SCOPING PHASE

APPENDIX G: MINUTES OF AUTHORITIES MEETING

APPENDIX H: COMMENTS AND RESPONSES REPORT (CRR)

APPENDIX I: COMMENT SHEET

List of Acronyms & Abbreviations

BID	Background Information Document
CRR	Comments and Responses Report
DAFF	Department of Agriculture, Forestry and Fisheries
DEA	Department of Environmental Affairs
DMR	Department of Mineral Resources
DoH	Department of Health
DSR	Draft Scoping Report
DWS	Department of Water and Sanitation
EAP	Environmental Assessment Practitioner
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
FSR	Final Scoping Report
GIS	Geographical Information System
GN	Government Notice
HCRW	Health Care Risk Waste
IAPs	Interested and Affected Parties
IDP	Integrated Development Plan
IWMP	Integrated Waste Management Plan
LCH	Limpopo Central Hospital
LIHRA	Limpopo Provincial Heritage Resources Authority
LDEDET	Limpopo Department of Economic Development, Environment and Tourism
NEMA	National Environmental Management Act (No. 107 of 1998)
NHI	National Health Insurance
PICC	Presidential Infrastructure Coordinating Commission
PPP	Public Private Partnership
SAHRA	South African Heritage Resources Agency
SAHRIS	South African Heritage Resources Information System
SANBI	South African National Biodiversity Institute
SDF	Spatial Development Framework
SIPs	Strategic Integrated Projects
ToR	Terms of Reference
WMA	Water Management Area

1 DOCUMENT ROADMAP

This document serves as the Draft Scoping Report (DSR) for the proposed Limpopo Central Hospital, situated in the Limpopo Province. In order to provide clarity to the reader, a document roadmap is provided below. The document roadmap provides information on the requirements of the 2014 Environmental Impact Assessment (EIA) Regulations, as amended (07 April 2017) as stipulated in Appendix 2 of Government Notice (GN) No. R. 982, as promulgated in terms of the National Environmental Management Act (NEMA) (Act No. 107 of 1998) as well as a guide on the content of each chapter. Please note that in some cases more information is provided than required in the EIA Regulations in which case there will be no correlating section to the EIA Regulations.

Table 1: Scoping Report Roadmap

Chapter	Title	Correlation with Appendix 2 of GN No. R. 982	
1.	**Document Roadmap**	-	-
2.	**Purpose of this Document**	1 (a)	Identify the relevant policies and legislation relevant to the activity
		1 (b)	Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location
		1 (c)	Identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks
		1 (d)	Identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment
		1 (e)	Identify the key issues to be addressed in the assessment phase
		1 (f)	Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site

Chapter	Title	Correlation with Appendix 2 of GN No. R. 982	
		1 (g)	Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored
3.	**Environmental Assessment Practitioner (EAP)**	2 (1) (a)	Details of – i) the EAP who prepared the report; and ii) the expertise of the EAP, including a curriculum vitae
4.	**Project Background and Motivation**	2 (1) (f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity within the context of the preferred location
5.	**Project Location**	2 (1) (b)	The location of the activity including – i) The 21 digit Surveyor General code of each Cadastral land parcel; ii) Where available, the physical address and farm name; and iii) Where the required information in terms of (i) and (ii) is not available, the coordinates of the boundary of the property or properties
		2 (1) (c)	A plan which locates the proposed activity or activities applied for at an appropriate scale, or if it is – i) A linear activity, a description and coordinates of the corridor in which the proposed activity or activities is undertaken; and ii) On land where the property has not yet been defined, the coordinates within which the activity is to be undertaken
6.	**Project Alternatives**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location of the development footprint within the site, including: i) Details of all alternatives considered; ix) The outcome of the site selection matrix; and x) If no alternatives including alternative locations for the activity were investigated, the motivation for not considering such
7.	**Project Description**	2 (1) (d)	A description of the scope of the proposed activity, including – i) All listed and specified activities triggered; and

Chapter	Title	Correlation with Appendix 2 of GN No. R. 982	
			ii) A description of the activities to be undertaken, including associated structures and infrastructure
8.	**Legislation and Guidelines Considered**	2 (1) (e)	A description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process
9.	**Scoping and EIA Process**	-	-
10.	**Assumptions and Limitations**	-	-
11.	**Need and Desirability**	2 (1) (f)	A motivation for the need and desirability for the proposed development including the need and desirability of the activity within the context of the preferred location
12.	**Profile of the Receiving Environment**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including: iv) The environment attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects
13.	**Public Participation**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including: ii) Details of the public participation process undertaken in terms of regulation 41 of the Regulations including copies of supporting documents and inputs; and iii) A summary of the issues raised by IAPS and an indication of the manner in which the issues were incorporated or the reasons for not including them
14.	**Environmental Issues**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including: v) The impacts and risks which have informed the identification of each alternative including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts – aa) can be reversed,

Chapter	Title	Correlation with Appendix 2 of GN No. R. 982	
			bb) may cause irreplaceable loss of resources; and cc) can be avoided, managed or mitigated vii) Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects; and viii) The possible mitigation measures that could be applied and level of residual risk
15.	**Methodology to Assess the Identified Impacts**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including: vi) The methodology used in identifying and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives
16.	**Plan of Study for EIA**	2 (1) (h)	A plan of study for undertaking the environmental impact assessment process to be undertaken including – i) A description of the alternatives to be considered and assessed within the preferred site including the option of not proceeding with the activity; ii) A description of the aspects to be assessed as part of the EIA process; iii) Aspects to be assessed by specialists; iv) A description of the proposed method of assessing the environmental aspects, including aspects to be assessed by specialists; v) A description of the proposed method of assessing duration and significance; vi) An indication of the stages at which the competent authority will be consulted; vii) Particulars of the public participation process that will be conducted during the EIA Phase; viii) A description of the tasks that will be undertaken as part of the EIA Phase; and ix) Identify suitable measures to avoid, reverse, mitigate or manage identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

Chapter	Title	Correlation with Appendix 2 of GN No. R. 982	
17.	**Oath of the EAP and Declaration of Independence**	2 (1) (g)	A full description of the process followed to reach the proposed preferred activity, site and location within the site, including: xi) A concluding statement indicating the preferred alternative, including preferred location of the activity
		2 (1) (i)	An undertaking under oath or affirmation by the EAP in relation to: i) The correctness of the information provided in the report; ii) The inclusion of comments and inputs from stakeholders and IAPS; and iii) Any information provided by the EAP to IAPS and any responses by the EAP to comments or inputs made by IAPS
		2 (1) (j)	An undertaking under oath or affirmation by the EAP in relation to the level of agreement between the EAP and IAPs on the Plan of Study for undertaking the EIA
-		2 (1) (k)	Where applicable, any specific information required by the Competent Authority
-		2 (1) (l)	Any other matters required in terms of sections 24(4)(a) and (b) of the Act
-		2 (2)	Where a government notice gazetted by the Minister provides for any protocol or minimum information requirement to be applied to a scoping report, the requirements as indicated in such notice will apply

Note that the following sections of Appendix 2 of GN No. R. 982 of the 2014 EIA Regulations (as amended) will be investigated further and reported on in the EIA Report, following the execution of the relevant specialist studies and targeted public participation:

- Section 2(1)(g)(v) - The impacts and risks which have informed the identification of each alternative, including the nature, significance, consequence, extent, duration and probability of such identified impacts, including the degree to which these impacts -
  aa) can be reversed;
  bb) may cause irreplaceable loss of resources; and
  cc) can be avoided, managed or mitigated.
- Section 2(1)(g)(vii) - Positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects.

- Section 2(1)(g)(viii) - The possible mitigation measures that could be applied and level of residual risk.
- Section 2(1)(g)(ix) - The outcome of the site selection matrix.
- Section 2(1)(g)(xi) - A concluding statement indicating the preferred alternatives, including preferred location of the activity.

2 PURPOSE OF THE DOCUMENT

The DSR is an important document as it is the first phase of the EIA Process and thus outlines the Scoping Process to be followed for the proposed Limpopo Central Hospital, which aims to:

1. Introduce the proposed project to all Interested and Affected Parties (IAPs);
2. Engage with IAPs to allow for participation in the process that is transparent, cooperative, informative and robust. Allow for informed decision-making with regard to the EIA process;
3. Identify the significant issues and impacts to be investigated further during the execution of the EIA phase;
4. Consider suitable and feasible alternatives for achieving the project's objectives; and
5. Determine the scope of the ensuing EIA phase in terms of specialist studies, public participation, and assessment of impacts and appraisal of alternatives.

Further, according to Appendix 2 of the 2014 EIA Regulations (as amended), the objectives of the Scoping Process are, through consultation, to:

a. Identify the relevant policies and legislation relevant to the activity;
b. Motivate the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location;
c. Identify and confirm the preferred activity and technology alternative through an identification of impacts and risks and ranking process of such impacts and risks;
d. Identify and confirm the preferred site, through a detailed site selection process, which includes an identification of impacts and risks inclusive of identification of cumulative impacts and a ranking process of all the identified alternatives focusing on the geographical, physical, biological, social, economic, and cultural aspects of the environment;
e. Identify the key issues to be addressed in the assessment phase;
f. Agree on the level of assessment to be undertaken, including the methodology to be applied, the expertise required as well as the extent of further consultation to be undertaken to determine the impacts and risks the activity will impose on the preferred site through the life of the activity, including the nature, significance, consequence, extent, duration and probability of the impacts to inform the location of the development footprint within the preferred site; and

g. Identify suitable measures to avoid, manage or mitigate identified impacts and to determine the extent of the residual risks that need to be managed and monitored.

This report will be available for the public and authorities to review and provide comments on during a 30-Day DSR review period. The Application Form for Environmental Authorisation (EA) will be submitted at the same time as the DSR to the Competent Authority: The Department of Environmental Affairs (DEA). The regulated timeframes for the process start from the date of receipt of the application by DEA, according to Section 21(1) of GN R. 982 of the 2014 EIA Regulations (as amended). The comments received from registered IAPs during the DSR review period (as well as the minutes of any meetings) will be incorporated into the Final Scoping Report (FSR). The FSR will contain the updated Comments and Responses Report (CRR). The FSR will be available for registered IAPs to ensure their comments have been addressed. The FSR will then be submitted to the DEA, as the 2014 EIA Regulations (as amended) require that the Scoping Report be submitted within 44 days of receipt of the application by DEA which includes a 30-Day review period reflecting the incorporation of comments received. Comments received by IAPs will help shape the subsequent EIA Phase to ensure the relevant studies are in place to assess specific impacts.

3 ENVIRONMENTAL ASSESSMENT PRACTITIONER

Nemai Consulting was appointed by Sakhiwo Health Solutions (SHS) as the independent Environmental Assessment Practitioner (EAP) to undertake the EIA for the proposed Limpopo Central Hospital. In accordance with Section 2 (1)(a) of Appendix 2 of GN No. R. 982 of the 2014 EIA Regulations (as amended), this section provides an overview of Nemai Consulting and the company's experience with EIAs, as well as the details and experience of the EAPs that form part of the Scoping and EIA team.

Nemai Consulting is an independent, environmental, social development and Occupational Health and Safety (OHS) consultancy, which was founded in December 1999. The Company is directed by a team of experienced and capable environmental engineers, scientists, ecologists, sociologists, economists and analysts. The core members of Nemai Consulting that are involved with the Scoping and EIA Process for the proposed development are captured in Table 2 below, and their respective Curricula Vitae are contained in **Appendix A**.

Table 2: Scoping and EIA core team members

Name	Qualification	Responsibility
Mr. D. Henning	MSc. River Ecology	• Project Manager • Quality Review
Mrs J. Davis	BSc. Hons – Geography	• EAP
Mr. C. van der Hoven	BSc. Hons – Environmental Sciences	• EAP

4 PROJECT BACKGROUND AND MOTIVATION

National Development Context

The South African Government adopted a National Infrastructure Plan in 2012 that intends to transform our economic landscape while simultaneously creating significant numbers of new jobs, and to strengthen the delivery of basic services. The plan also supports the integration of African economies. The National Infrastructure Plan consists of 18 Strategic Integrated Projects (SIPs) which have been approved by the Presidential Infrastructure Coordinating Commission (PICC) to support economic development and service delivery in all provinces.

As part of the social infrastructure SIPs, SIP 12: Revitalisation of public hospitals and other health facilities, aims to build and refurbish hospitals, other public health facilities and revamp 122 nursing colleges. The SIP contains major builds for six hospitals, and extensive capital expenditure to prepare the public healthcare system to meet the requirements of the National Health Insurance (NHI) system. Major infrastructure projects under the health sector associated with this SIP include the construction of the proposed Limpopo Hospital.

Background to the proposed development of the Limpopo Central Hospital

The Limpopo Central Hospital Feasibility Report (Sakhiwo, 2018) indicated that public health infrastructure is a fundamental pillar to building a successful national health insurance programme. However, according to the National Service Delivery Agreement, the current public health infrastructure cannot adequately support the service delivery needs of the country. Health facility planning, including providing new hospitals and clinics and upgrading established facilities, needs to be expedited to increase citizen's access to a high standard of health care facilities. The fact that there is a significant shortage of skilled practitioners and health care workers in South Africa exacerbates the situation. Currently, the existing medical schools are unable to produce the requisite number of health professionals. If the country is to meet the requirements of the NHI goals of more equitable access to high-quality health services for all South Africans, both the academic component and health service provisioning must be improved.

In 2008/9, strategic analysis identified the need to develop a new 630 bed academic hospital in the Limpopo Province to meet the operational obligations of the Limpopo Department of Health and Social Development (DHSD) following which, in 2010, both the business case and health brief were approved by the Limpopo Department of Health and the National Department of Health. Planning for the new central hospital, based on the identified needs, commenced. This included a masterplan of the new hospital on the new identified site donated by the local municipality as well as 1:200 concept designs. When the Minister of Health announced in 2011 that five flagship academic hospitals are to be managed and planned for by the National Department of Health, the Limpopo Academic Hospital in Polokwane was one of these five hospitals. The programme for these new academic hospitals was subsequently transferred to

the National Department of Health (DoH), under which authority all academic hospitals reside. At this point, transactional advisors (TA) were appointed to independently investigate a Public Private Partnership (PPP) funding model to finance separately, each of the new hospitals.

The outcome of the feasibility study for the Limpopo Academic Hospital, managed by the TA, was a proposed project scope that included the procurement of a new 580 bed academic hospital in Polokwane on a greenfield site, as well as the provision of doctors' and nurses' accommodation. Oncology services were to remain at Pietersburg Hospital and Ophthalmology at Mankweng Hospital (both providing these currently as tertiary level services). However, the PPP model was ultimately considered unfeasible in 2013 and it was not until 2015/16 that the project planning process recommenced (still under the auspices of National Department of Health) for the new central hospital. The subsequent draft 10 Year Infrastructure Plan for Health Services (10YIP) (2016), initiated by the DoH, and the National Tertiary Health Services Plan (NTHSP) reports necessitated a review of the provision of Level 1, 2 and 3 (tertiary) services in Limpopo with specific reference to the new academic hospital in Polokwane. A new review process was initiated inclusive of a need analysis and strategic planning, option analysis and procurement option analysis to determine affordability of the preferred options and procurement model.

Currently only 242 of the required 688 L3 beds are provided in the province of which 187 are at Pietersburg hospital and 55 are at Mankweng Hospital. While over the past 25 years the Limpopo Health Department has expanded its capacity in an attempt to provide tertiary health care, Limpopo has historically been dependent on hospitals in Gauteng for tertiary services particularly Dr George Mukhari and Steve Biko Hospitals and, in recent years, Charlotte Maxeke and Chris Hani Baragwanath Hospitals. A new clinical service plan for increased tertiary services in the province is therefore motivated for to address this need inclusive of the provision for sub specialties in surgery and medicine, obstetrics and gynaecology, paediatrics and neonatology, critical care and emergency medicine. The most important clinical service need being maternal and child care, trauma management and oncology.

Options Analysis

Infrastructure and how best the proposed tertiary health services can be accommodated physically in a functional layout to support the clinical needs, was reviewed in four separate options under the Options Analysis. These options were initially considered in the Business Case then reviewed in the feasibility study conducted for the PPP option in 2013, and were then reviewed again in the latest feasibility report:

- Option 1: Consolidated specialist services – reconfiguration of existing hospital, no new hospital;
- Option 2: Split specialist services and build a new 488-bed academic hospital;
- Option 3: New 688 bed academic hospital; and
- Option 4: Do nothing – no change

In the feasibility report, the four options were quantified and evaluated and the advantages and disadvantages per option were considered. The options were compared in detail with respect to compliance, service delivery, academic teaching space, site constraints, departmental adjacencies, future expansion, functionality, flow, access, human resource efficiencies, management structure, construction and construction methods, cost and timelines.

Preferred Option

There has been overwhelming evidence of the need for a comprehensive tertiary care facility in Limpopo since 1994. The need has only increased with provincial population growth and increasing pressure on Gauteng tertiary facilities, struggling to accommodate that province's own growth. The Limpopo population's demand for services is unlikely to be vastly different from that of Gauteng, which has 10 times more tertiary beds per dependent population than Limpopo. Even with optimal staffing at district and regional hospitals there is a definite need for the planned 488 L3 new hospital. The limiting factor will be the ability to attract medical specialists (and appropriate specialist nurses), a challenge which will be facilitated greatly by a well-staffed medical school in Polokwane.

Additional to the immediate health benefit to the provincial population, the new Limpopo Central Hospital will be a positive contribution not only to the Limpopo Province but to the country, stimulating the economy both on a macro and micro level. Benefits will be in the form of employment opportunities, especially locally; the provision of goods and services; improvement of the skills of the students passing through the Medical School who, by virtue of their increased earning power, improved economic activity; improving the number of health professionals in the region thereby improving the health of the people in that region which, in turn, due to its focus on preventive practice, reduces the burden of disease and the associated drain on the fiscus. This should particularly affect the maternity and neonatal mortality rates which in itself will increase longevity and the added benefits to the economy. The estimated total annual operational expenditure of approximately R1.3 billion, could create an additional R2.3 billion in new business sales, R0.9 billion in additional GGP, as well as 2 917 sustained employment opportunities.

The Feasibility Report (Sakhiwo, 2018) concluded that **Option 2: Split specialist services and build a new 488-bed academic hospital** was selected as the preferred option due to it carrying the least risks, the option is the most cost-efficient option and has the shortest timelines of all the compared options. This option was therefore assessed further in this report.

5 PROJECT LOCATION

5.1 Geographical Context

The proposed Limpopo Central Hospital is situated within the Limpopo Province. The proposed project footprint falls within the jurisdiction of the Capricorn District Municipality (DM), and the Polokwane Local Municipality (LM). Refer to **Figure 1** below.

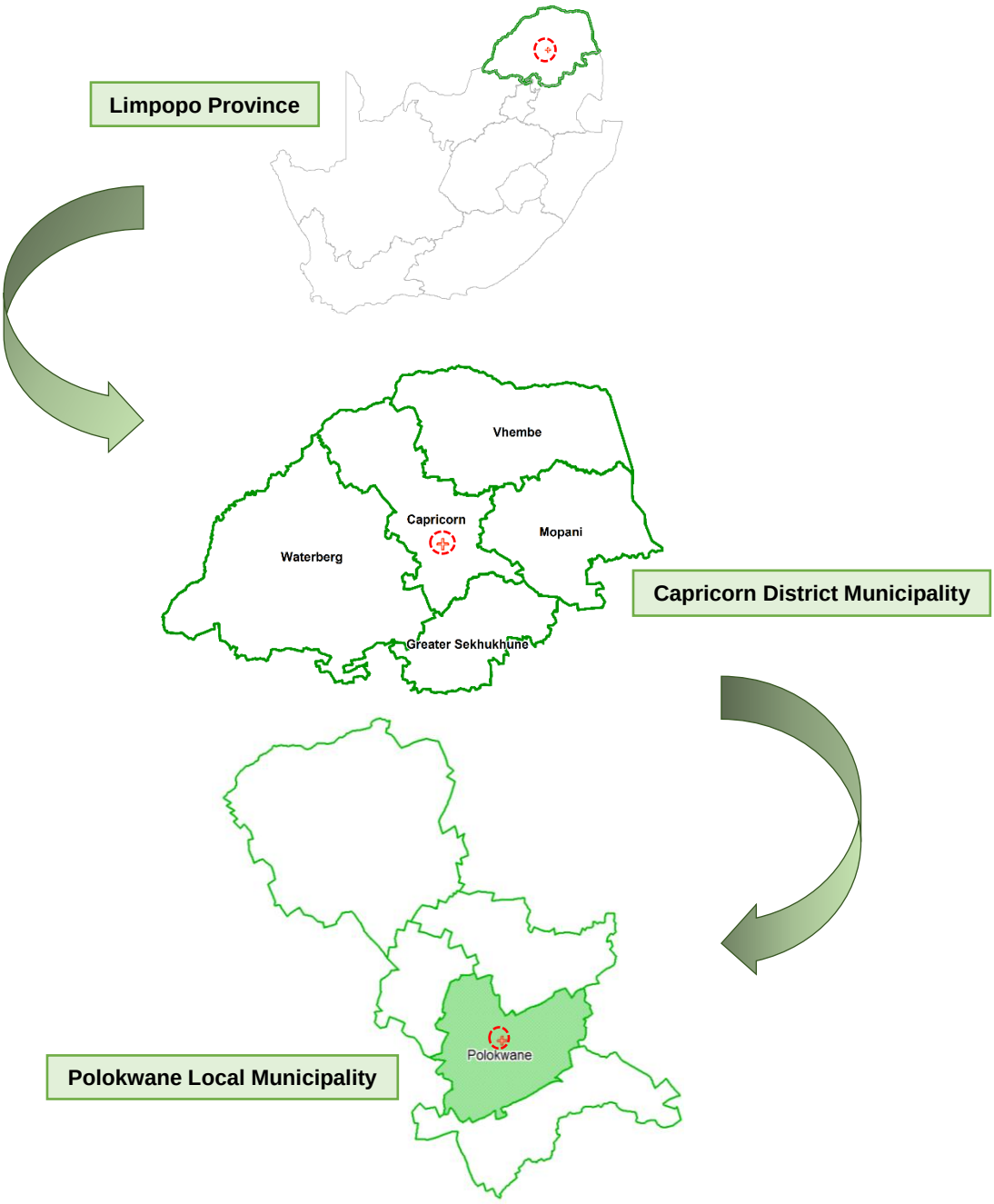


Figure 1: National, provincial and municipal map

5.2 Proposed Site

The proposed Limpopo Central Hospital is currently situated between Edupark, the Northern Academy Secondary School and the N1 road. The proposed site is on the remainder of Erf 6861 of Pietersburg Extension 30. Refer to **Figures 2** and **3**. Locality maps of the site are also contained in **Appendix B**.

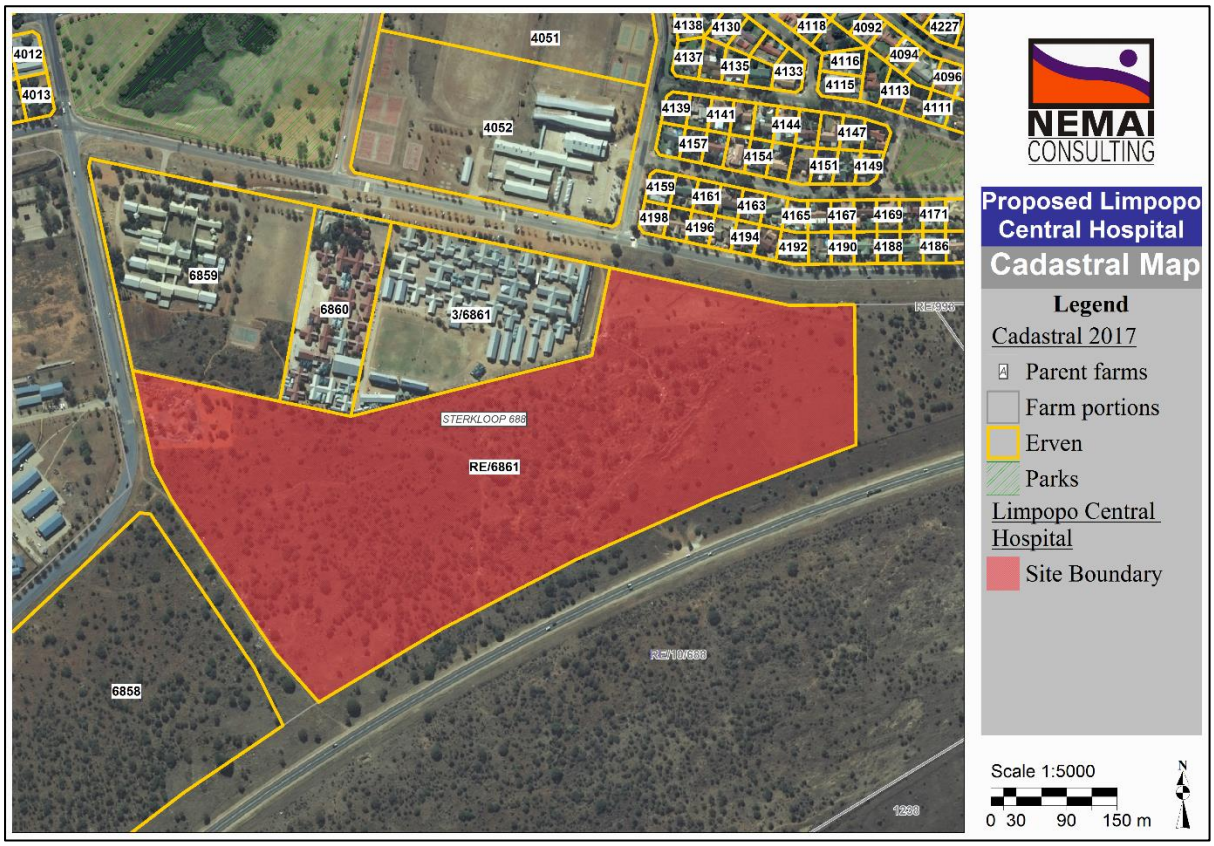


Figure 2: Cadastral map (based on 2017 cadastral information)

The proposed site is situated to the north of the N1 (Polokwane Bypass), south of Suid Street and to the east of Webster Street. Refer to **Figure 3** for on-site photographs.

Figure 3: On-site Photos

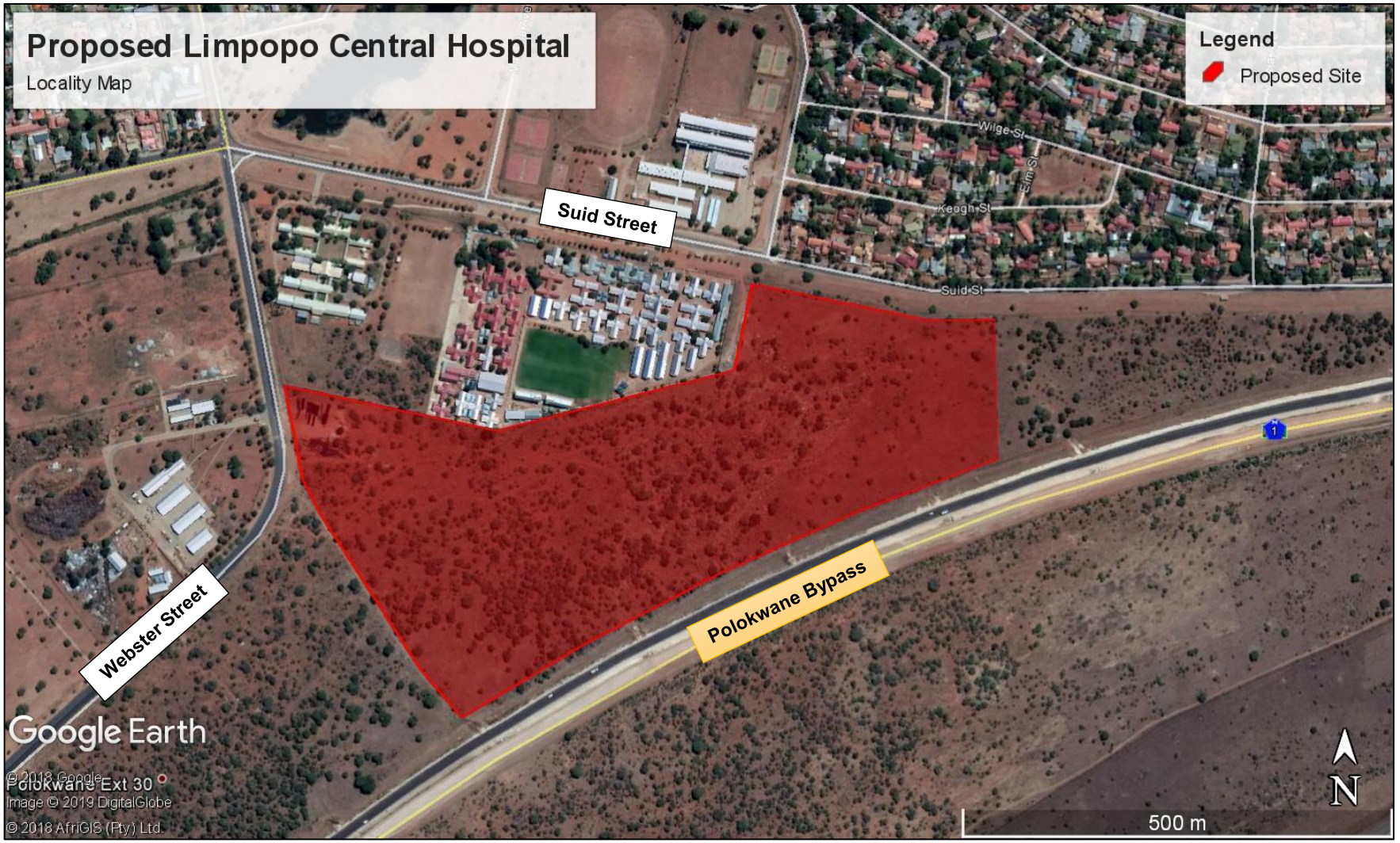


Figure 4: Google Earth locality map

6 PROJECT ALTERNATIVES

The 2014 EIA Regulations (as amended) require that feasible project specific alternatives are identified (including the "do nothing" option). The Regulations define alternatives as the following:

Different means of meeting the general purpose and requirements of the activity, which may include alternatives to:

- *Property on which or location where the activity is proposed to be undertaken;*
- *Type of activity to be undertaken;*
- *Design or layout of the activity;*
- *Technology to be used in the activity; or*
- *Operational aspects of the activity; and*
- *Includes the option of not implementing the activity.*

In terms of the 2014 EIA Regulations (as amended) under NEMA, the fundamental purpose of the Scoping exercise is the consideration of viable and reasonable alternative sites, processes, and technologies of achieving the objectives of the project. The sub-sections to follow discuss the project alternatives considered during the feasibility stage of the project and provide motivation as to why no alternatives will be considered for the Scoping and EIA Process for the proposed Limpopo Central Hospital project.

6.1 Options Analysis

Options considered during the Feasibility Study (Sakhiwo, 2018) are discussed in this section. Infrastructure and how best the proposed tertiary health services can be accommodated physically in a functional layout to support the clinical needs, was reviewed in four separate options. These options were initially considered in the Business Case, then reviewed in the feasibility study conducted for the PPP option in 2013, and were then reviewed again in the latest feasibility report:

Option 1: Consolidated specialist services – reconfiguration of existing hospital, no new hospital.

1. The existing Pietersburg hospital would be upgraded to a central hospital with a limited number of regional beds.
2. Mankweng hospital would be a regional hospital for Capricorn District with limited districts beds to accommodate the local population.

Option 2: Split specialist services and build a new 488-bed academic hospital.

1. A new 488 L3 bed central hospital, Limpopo Central Hospital, to be constructed on the new site;

2. Pietersburg Hospital to become a regional hospital, but still provide some tertiary services (90 x L3 beds). Oncology services to remain at Pietersburg (58 beds) as well as nephrology and urology beds (32 beds) and the renal dialysis unit;
3. Mankweng hospital to become a district hospital with some regional services and limited tertiary beds. The existing 36 Ophthalmology tertiary beds to be remain at Mankweng Hospital.

The total tertiary service component for the Limpopo Academic Complex (not including psychiatry) will be 614 beds which is less than other estimates.

Option 3: New 688 bed academic hospital.

1. New central hospital, Limpopo Central Hospital, with 688 beds will be built on the new site and will provide all tertiary services in the region;
2. The tertiary beds will be relocated from Pietersburg and Mankweng hospitals.
3. Pietersburg Hospital to become a regional hospital with limited district beds and no tertiary beds;
4. Mankweng hospital to become a district hospital with limited regional beds and no tertiary beds.

Option 4: Do nothing – no change

In the feasibility report, the four options were then quantified and evaluated and the advantages and disadvantages per option were considered. The options were compared in detail with respect to compliance, service delivery, academic teaching space, site constraints, departmental adjacencies, future expansion, functionality, flow, access, human resource efficiencies, management structure, construction and construction methods, cost and timelines.

The feasibility report concluded that **Option 2** was selected as the preferred option due to it carrying the least risks, it is the most cost-efficient option and has the shortest timelines of all the compared options.

6.2 Project Alternatives

6.2.1 Site Alternatives

The feasibility report considered the following criteria in the selection of the proposed site:

- Accessibility from major arterial routes;
- Proximity to both Pietersburg Hospital and Mankweng Hospital;
- Developable land/area of 50 hectares;
- Availability in the short term in order to proceed with planning well knowing that the site will have the right zoning and costs;
- Certainty of tenure of the land; and
- Current Title Deed No. T55889/2000

The current proposed site was selected as the most feasible option due to the following information:

- There do not appear to be any restrictive conditions that exist in the title deed to prohibit the development of the proposed hospital;
- The new site selected is partly developed, where a section is used for the Edupark Campus incorporating the Business School of the University of Limpopo. The remaining area is considered both to be large enough and to offer significant benefits for use for the Academic Hospital Complex (the new school of medicine and the new central hospital).
- The site is currently owned by the Municipality of Polokwane who have resolved to donate the sites for the purpose of the Medical School and an Academic Hospital. The University of Limpopo have already taken transfer of the portion for the medical school. The process for the entering into the Deed of Donation and transfer of the Academic Hospital and accommodation portion to the Limpopo Department of Public Works, has commenced;
- The current zoning of the site allows for the development of the Academic Hospital;
- The proposed new central hospital was identified as the highest development priority for the Limpopo Province as there is a growing need for services in the area. Polokwane is the capital of Limpopo and is acting as a major service centre for its urban population, surrounding areas and the whole of Limpopo Province;
- No restrictive conditions exist that prohibits the development of the proposed central hospitals, medical school and student residences. In terms of the Polokwane Municipality's Town Planning Scheme, the building height limit is 5 storeys, the maximum coverage is 60%, and the bulk is limited to the site area. The minimum number of car parking spaces is 8/100m² of Gross Leasable Floor area. A building setback of 16.0m exists along the national (N1) road boundary and a 3.0m building setback along Edupark Avenue. The concept design indicates that the hospital will be compliant with these restrictions;
- The site is currently a green field vacant piece of land that has been earmarked for the development of a new academic hospital. The site is available for the new hospital development; and
- A previous Draft Scoping Report for the Limpopo Academic Hospital was conducted in 2010 (LEDET Ref: 12/1/9-7/2-C53). The environmental assessment did not identify any fatal flaws. The report considered and assessed six alternative hospital sites in and around Polokwane. The report concluded that the current proposed site was preferred due to the following factors:
    - Access is considered excellent for vehicular transport from all directions except direct assess from the West, but access from the West can still be fairly easy via the arterials or even the upgraded Dorp Street.
    - The site is ideally situated in terms of proximity to both the Pietersburg Hospital (via Dorp Street) and Mankweng hospital being on the R71 approximately 25km away.
    - The entire site (excluding the portion allocated to Edupark and the school, is developable. The developable area is in the order of 53 hectare.

- The land is currently zoned for Educational purposes. The land is not agricultural zoned and is within the urban edge of Polokwane.
- The site belongs to the Polokwane Local Municipality and has already been offered to the Department of Health for purposes of the Limpopo Academic Hospital.

No site alternatives have therefore been assessed as part of this Scoping and EIA Process as the current proposed site was found to be the most feasible site, and was selected to proceed with the detail design for the hospital.

6.3 Layout Alternatives

Three different layouts for the proposed site were previously prepared, namely:

Site Layout 1 – dated 2018/11/02 indicating a facility with a separated Oncology Unit, Trauma Centre approached from the north, open staff parking areas and a separate entrance to the Oncology Unit.

Site Layout 2 – dated 2018/12/07 indicated the same as above, except the Mother and Child Hospital was placed separately on the northern side of the main buildings. The Trauma Centre was situated between the latter and the main entrance. This layout was accepted by the Standard for Infrastructure Procurement and Delivery Management (SIPDM) Gate 4 with recommendations.

Site Layout 3 – dated 2019/02/15 incorporates the recommendation of SIPDM Gate 4 (**Figure 6).**

Site Layout 3 was therefore only assessed as part of this Scoping and EIA Process, as this design is deemed acceptable as it has been updated with the recommendations of SIPDM, and has been preliminary approved by the DoH. No further layout alternatives have therefore been assessed as part of this Scoping and EIA Process.

Refer to **Appendix C** for the master plan.

6.4 No-go Alternative

The 'no-go' alternative refers to a situation where the proposed development is not built. This would mean that the area where the proposed Limpopo Central Hospital is to be located would not change in any way, and that the environmental conditions within the site would generally stay the same.

To do nothing means that the status quo would remain the same, i.e.:

- The referral system will be dysfunctional and there will continue to be an under provision of both regional and tertiary beds/services in the province. Patients will still be referred out of the province where the required tertiary services are not available and they will have to compete with patients from other provinces for beds as

Mpumalanga refers to Limpopo hospitals adding continued strain on the resources as there are insufficient Level 2 (L2) and Level 3 (L3) beds;

- The fees expended to date will be fruitless expenditure;
- The teaching platform will be incomplete as the full spectrum of services will not be supplied. This will be exasperated by the fact that state of the tertiary hospital, Pietersburg, is in a poor condition and outdated. Major upgrade to this facility is essential;
- The province will continue to experience a lack of key specialists as working conditions continue to be inadequate and in a poor condition; and
- The risks will continue without sufficient resources in place.

7 PROJECT DESCRIPTION

7.1 Scope of Work

The building of a new 488 bed central hospital, Limpopo Central Hospital, on a new site in Polokwane that will provide the tertiary care for the province and which will be the major teaching hospital for the University of Limpopo Faculty of Health Sciences and School of Medicine.

There will be provision of the following at the new facility:

- 488 beds clinical care capacity for a wide range of highly specialised care;
- Mostly arranged in 28 bed wards (comprising some single-bed, double-bed, four bed and six bed units);
- Specific intensive care units (ICU) and high care (HC) layouts;
- Maternal and child health (MCH) (Paediatrics and Obstetrics & Gynaecology) will be consolidated on the site separate to the adult component but sharing clinical and hospital support services;
- A mothers lodge (capacity of 24);
- A pregnant mothers lodge (capacity of 18);
- Transit – waiting (capacity of 12); and
- A day procedure beds (capacity of 12)

There will be support for a complete tertiary clinical care and academic complex core teaching capacity, compromising of a 488 x L3 beds at Limpopo Central Hospital delivering Provincial Tertiary Services (T1) and Central Referral Services (T2) care in most major clinical disciplines.

The proposed hospital will also require bulk services (electrical, water and sewer etc.). Refer to **Section 7.3** for a description of the resources required for the construction and operation of the proposed hospital.

Refer to **Figure 5** for 3D perspective views of the proposed Limpopo Central Hospital, **Figure 6** for the master plan, and **Figures 7 – 10** for the floor plan concept designs**.**

Figure 5: 3D perspective views of the Proposed Limpopo Central Hospital

Figure 6: Master plan

Figure 7: Lower ground floor concept design

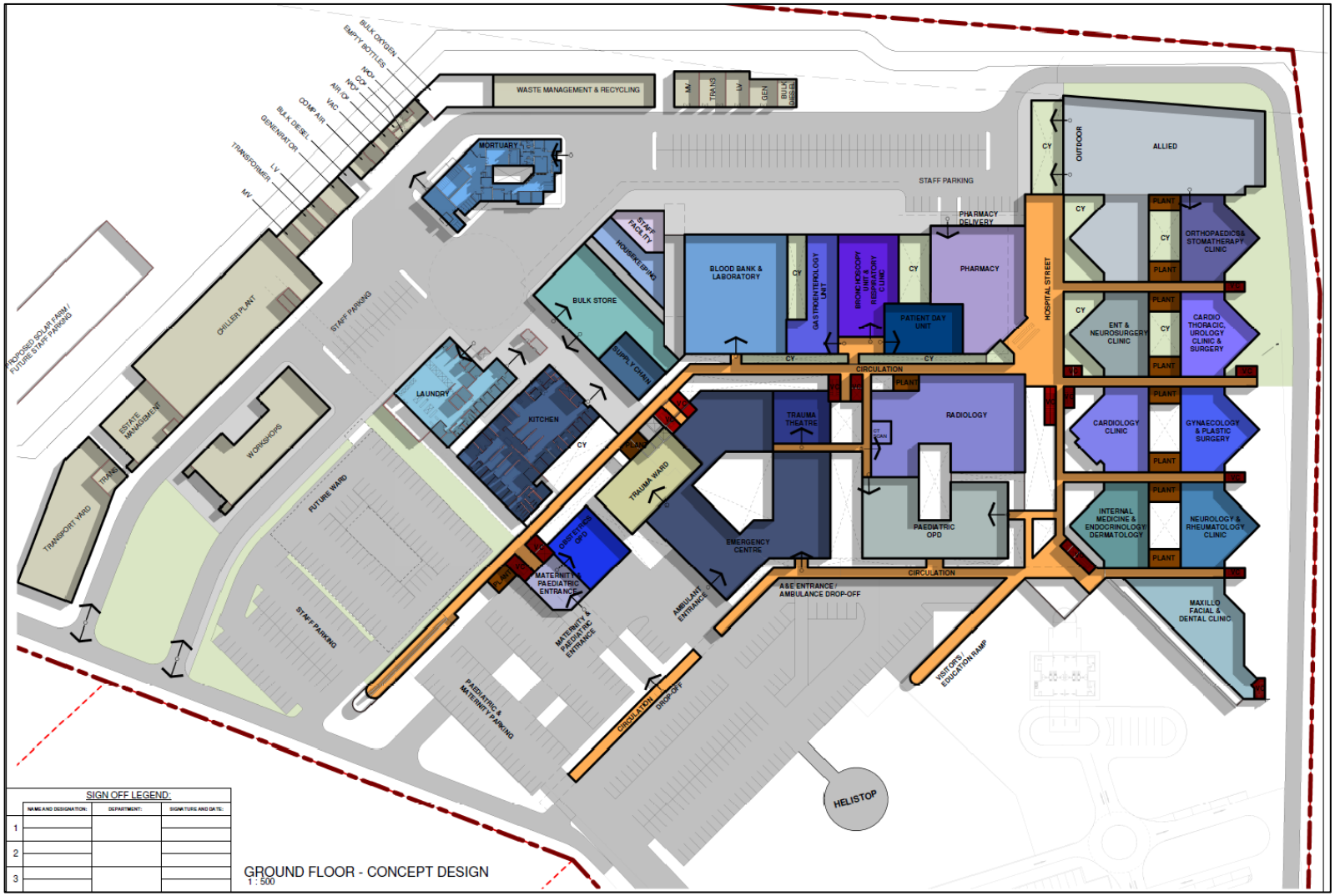


Figure 8: Ground floor concept design

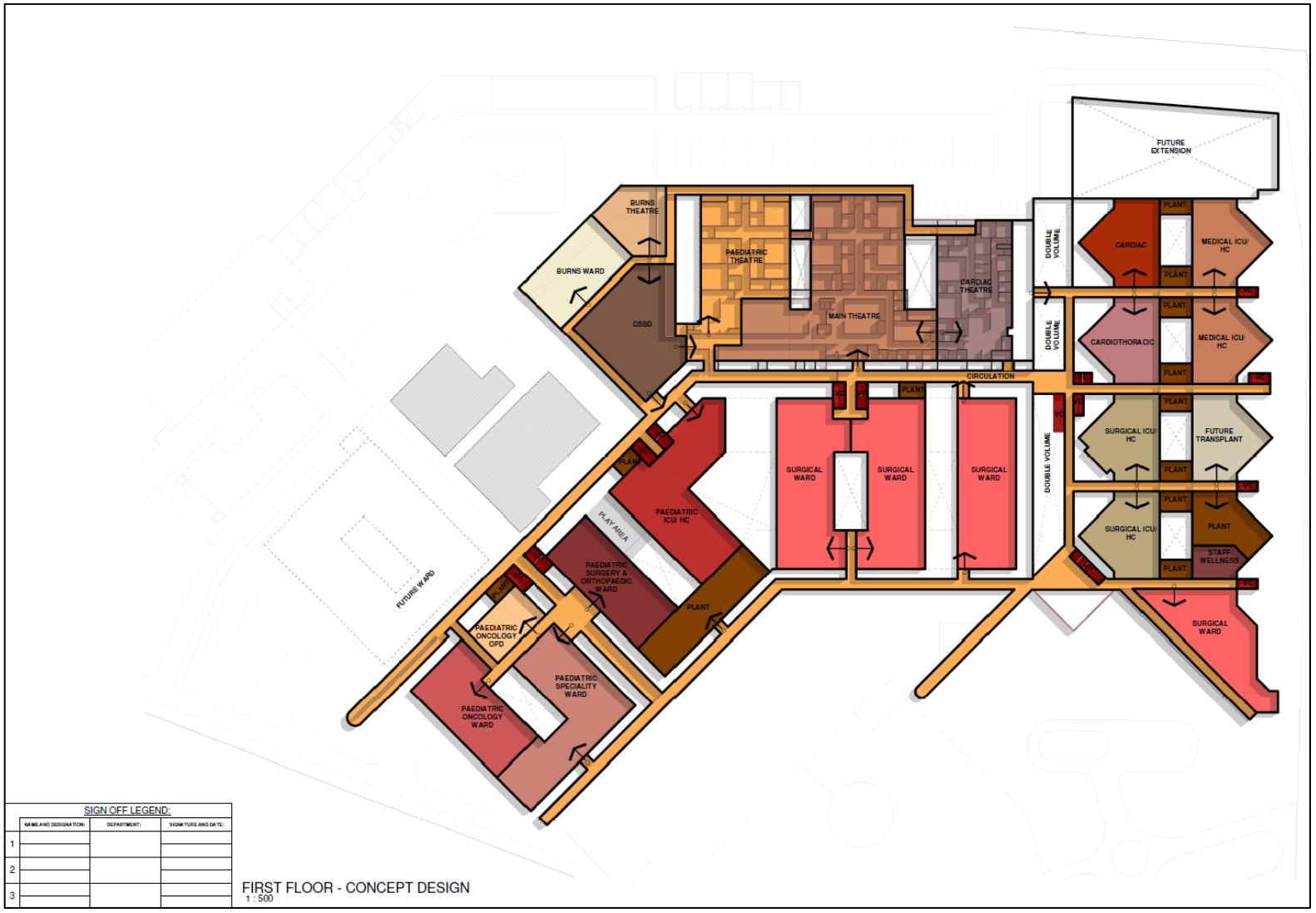
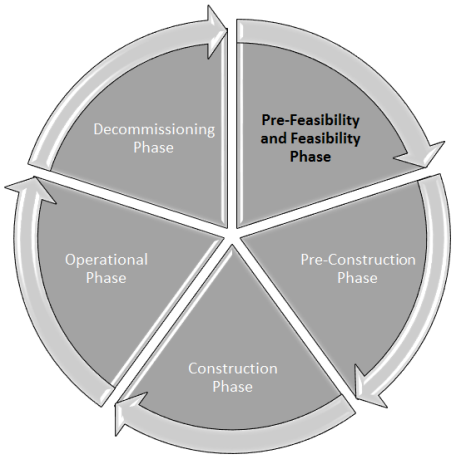


Figure 9: First floor concept design

Figure 10: Second floor concept design

7.2 Project Life-Cycle

The project life-cycle for the proposed Limpopo Central Hospital includes the following primary activities:

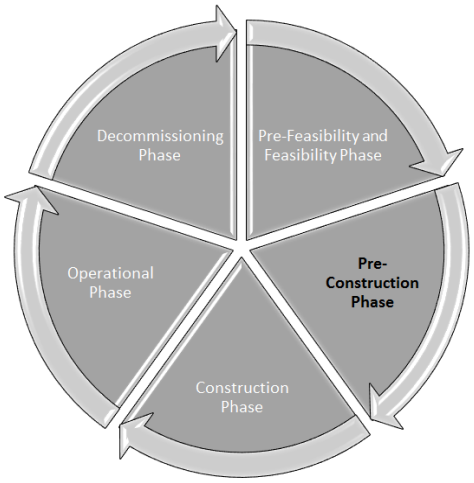


Feasibility Studies

This includes selecting a suitable location for the hospital site, which is assessed as part of the EIA.

Pre-Construction

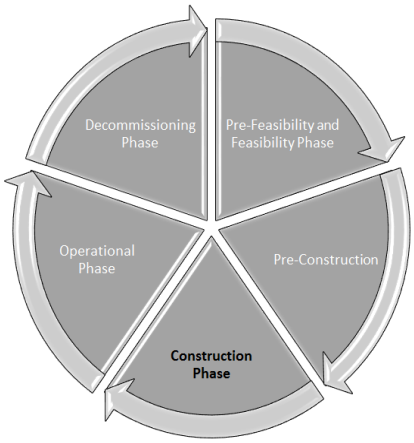
This phase, which is only undertaken should environmental authorisation be obtained, includes the following –



- Aerial survey of the site;
- Selection of the most appropriate structures;
- Environmental specialists (e.g. ecologist, heritage) conduct a walk-down survey to determine the exact locations of the sensitive features, based on sensitive environmental features and technical criteria; and
- Preparation of relevant planning documentation, including technical and design documentation.

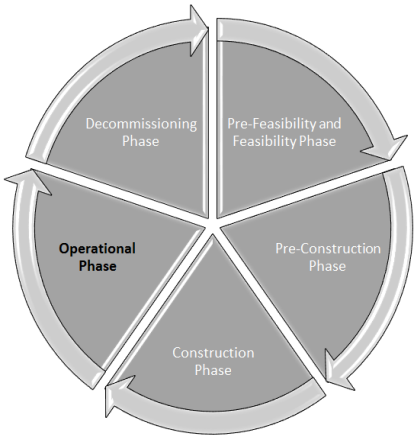
Construction

During the implementation of the project, the construction activities related to the installation of the necessary infrastructure and equipment is undertaken.



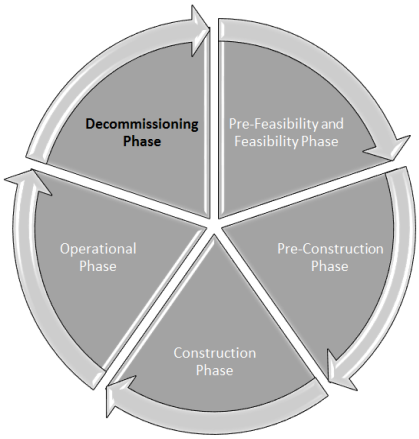
Operation

This includes operational activities associated with the use and operation of the hospital.



Decommissioning

This includes activities associated with the decommissioning of the hospital.



The sub-sections to follow provide an overview of key activities during selected phases of the project life-cycle.

7.2.1 Construction Phase

The construction period of the proposed Limpopo Central Hospital will take approximately 60 months and will involve the following activities:

- Fencing off of the construction domain;

- Fencing off / marking of protected fauna and heritage resources as per the recommendations stipulated in the specialist studies and walk-down survey;
- Removal of topsoil, and topsoil/spoil stockpiling;
- Installation of foundations and construction of the required lower ground floor, ground floor, first floor and second floor;
- Installation of the hospitals' clinical spaces and supporting services;
- Construction of dedicated internal access roads and parking areas for staff and visitors;
- Installation of a service road leading to the lower ground floor for deliveries and service/supporting units;
- Installation of administration facilities;
- Installation of bulk services (water, sewer, power supply), storage facilities (including general and hazardous waste) and stormwater management infrastructure; and
- Landscaping and rehabilitation of the site.

7.2.2 Operational Phase

The key tasks during the operational phase for the proposed development include the following:

- Operation of the Limpopo Central Hospital; and
- Stormwater management

7.3 Resources Required for Construction and Operation

This section briefly outlines the resources which will be required in order to execute the construction and operation of the proposed Limpopo Central Hospital (Civil Engineering Services Report, 2019).

7.3.1 Water

7.3.1.1 Connection to the existing external system:

An existing 315mm diameter (Ø) class 12 uPVC main is located on the eastern side of Webster Street and runs along the western boundary of our site. In addition, an existing bulk steel water main runs on the south-western boundary of the erf which feeds to two stadiums at the Peter Mokaba sports complex. The Polokwane Municipality has confirmed that based on the estimated water requirements, the new hospital will be able to connect and be fed from the existing 315mmØ class 12 uPVC main running along Webster Street on the western boundary of the site. The existing 315mmØ main has both sufficient capacity and pressure to satisfy the needs of the Hospital Development.

7.3.1.2 Internal distribution system:

The proposed development will be provided with 160mmØ Class 12 water mains which will feed a firewater reservoir of 250kl and a domestic water reservoir of 548kl respectively. Water will then be reticulated from this reservoir by means of a combined 110mmØ uPVC Class 16 domestic and fire main for reticulation within the building. A separate 110mmØ Class uPVC

Class 16 main will be provided to feed the external fire hydrants. Pumps and tanks will be provided to maintain the required pressures and flows.

7.3.2 Sanitation

7.3.2.1 Internal Sewer Network:

The internal sewer network will be water borne gravity sanitation system. Main sewer lines will be 160mmØ uPVC pipes (Class 34) with 110mmØ building connections. The main collector line which will tie into the main municipal connection will be a 250Ø Class 34 uPVC main.

7.3.2.2 Connection to external sewer network:

The main outfall sewer line will connect to the site sewer network at the north-western corner of the hospital site. From this point it will cross Webster Street and run along the western side of Webster Street within the road reserve. At South Street it will cross the stormwater channel via the road reserve and on top of the existing stormwater culverts under the road, and will then follow the southern boundary of South Street up to existing Manhole No. 307, where it will tie into the existing 525Ø Class 50D municipal main. A meeting was held with municipal officials and it was confirmed that connecting at this point would be in order. Refer to technical drawings of the proposed sewer pipeline in **Appendix C**.

7.3.3 Power Supply

The main power supply to the site shall be obtained from the Beta substation located in Suid Street. Sufficient capacity is available in this substation to allow for a 12MVA connection to the site. Power shall be fed to the site via suitably sized cables at 11kV from a substation that needs to be constructed on the site boundary from where an internal 11kV ring will be constructed to feed both the hospital building as well as all the other future developments on site. The initial estimated load for the hospital building alone is 6MVA. This will be refined and recalculated during the design development phase. Refer to technical drawings of the proposed substation in **Appendix C**.

The power cables required which will start from the Beta Substation on Suid Street, will be installed underground within the existing road servitudes all the way to the proposed site (see **Figure 11**). The proposed route crosses a watercourse via an existing bridge, and crosses a stormwater channel via an existing stormwater culvert. It is assumed that no excavation will be required within a watercourse, as the cable will be installed within sleeves fixed to the existing concrete bridge and stormwater culvert.

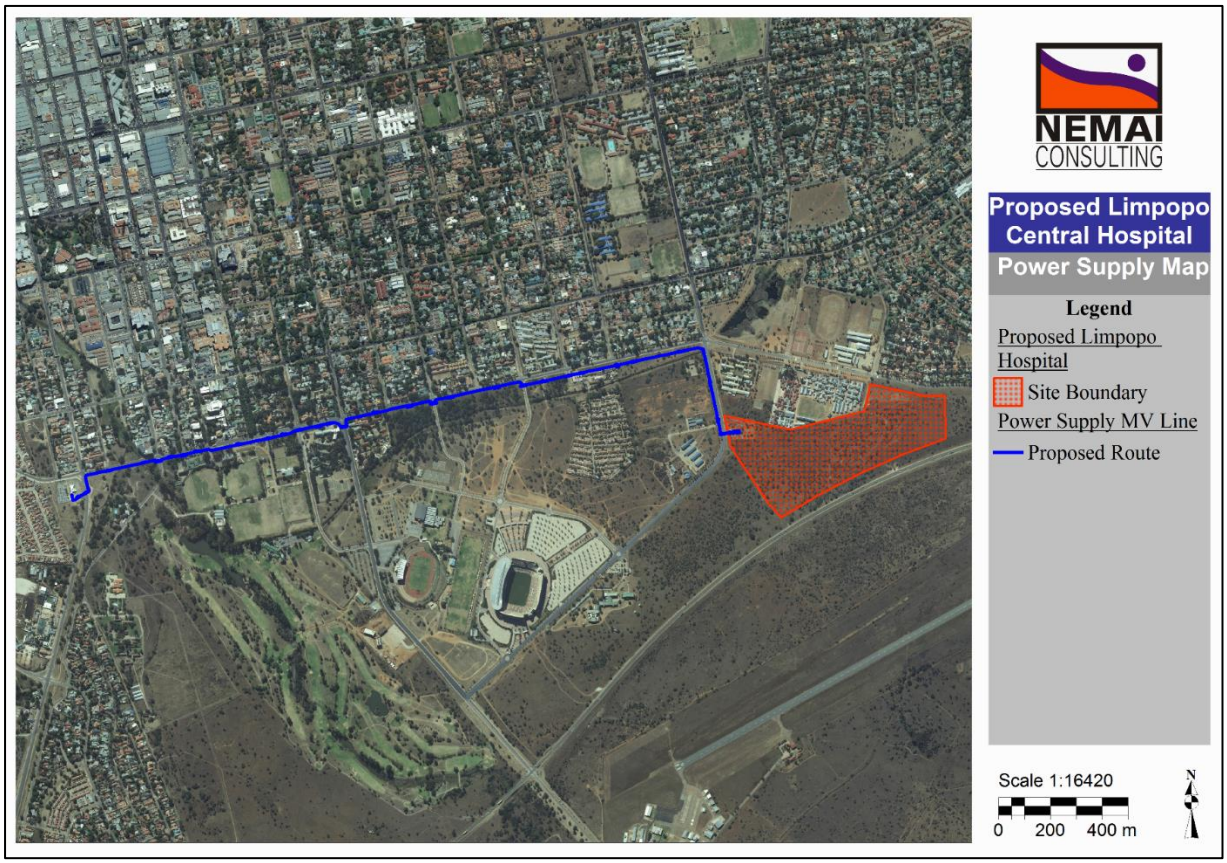


Figure 11: Proposed Power Supply

7.3.4 Stormwater Management

The internal stormwater network will be a combination of open channels and an underground piped culvert system. Rainwater harvesting and the use of stormwater infiltration trenches to re-charge underground water levels will be employed where possible. A stormwater attenuation pond is proposed for the development to attenuate the peak flows to the same pre-development run-off levels. An outlet structure will be constructed at the entrance to the development and stormwater from the development will be discharged into the existing concrete lined V-drain situated at the entrance to the development on the eastern side of Webster Street. The outlet structure of the pond will be designed such that this will mimic the pre-development flows. The attenuation volume required is 7350m³. The final position and dimensions of the attenuation pond will be determined during detail design. Further provisions for stormwater management on site will be included in the EMPr as part of the EIA Report.

7.3.5 Waste Management

The construction phase will have the following waste management process:

- Solid waste generated during the construction phase will be temporarily stored at a suitable location (e.g. at construction camp) and will be removed at regular intervals

and disposed of at approved waste disposal sites. All the waste disposed of will be recorded.

- ❖ All storage of general or hazardous waste in a waste storage facility (e.g. onsite waste transfer station) will comply with the national norms and standards (GN R. 926 of 29 November 2013). The waste storage facility will be established at the construction camp where waste from site will be collected, sorted, weighed and placed in skips and recycling containers for removal to service providers and appropriate registered landfill sites (hazardous and general sites, as required).

The operational phase will have the following waste management process:

- ❖ Medical waste of all categories will be stored securely on site in dedicated rooms for collection by a registered third party, and will then be removed from site. No incineration will be installed on site. The storage areas will comply with the national norms and standards (GN R. 926 of 29 November 2013). The anticipated volume is approximately 15000kg/month.
- ❖ All general and hazardous waste will be stored at a waste management facility on site, where waste from the hospital will be collected, sorted, weighed and placed in skips and recycling containers for removal to service providers and appropriate registered landfill sites (hazardous and general sites, as required). The storage areas will comply with the national norms and standards (GN R. 926 of 29 November 2013).
- ❖ The proposed hospital is classified as a 'major generator', as it will generate health care risk waste (HCRW) in excess of 20kg per day. The handling and storage of the HCRW, before the collection and removal by a registered third party, will comply with the regulations as stipulated in the *National Health Care Risk Waste Management Regulations* (GN No. R.463 of 30 April 2018).
- ❖ A mortuary will be available on site. The operation of the facility will comply with the requirements as specified in the *Regulations relating to the Management of Human Remains* (GN No. R. 363 of 22 May 2013) published in terms of the National Health Act, 61 of 2003.

Further provisions for the management of general and hazardous waste (including HCRW), will be included in the EMPr as part of the EIA Report.

7.3.6 Access Roads

The site is situated within an urban area with existing roads, thus no new access roads will be required for the construction phase. Access to the proposed site will be via Webster Street.

7.3.7 Construction Camp

It is anticipated that provision will be made for the following facilities at the construction camps:

- ❖ Concrete batching plant;
- ❖ Soil stockpile area;

- ❖ Materials laydown area;
- ❖ Site offices;
- ❖ Parking;
- ❖ Materials testing laboratory;
- ❖ Workshops and stores;
- ❖ Reinforcing steel bending yard;
- ❖ Areas for the handling of hazardous substances;
- ❖ Wash bays for construction plant;
- ❖ Facilities for the bulk storage and dispensing of fuel for construction vehicles,
- ❖ Ablution facilities; and
- ❖ A waste collection area for off-site disposal.

The location of the construction camps will be identified and assessed as part of the EIA phase.

7.3.8 Construction Labour

The appointed Contractor will make use of skilled labour where necessary. In instances where casual labour is required, they will be sourced locally as far as possible.

8 LEGISLATION AND GUIDELINES CONSIDERED

8.1 Legislation

8.1.1 Environmental Statutory Framework

The legislation that has possible bearing on the proposed project from an environmental perspective is captured in **Table 3** below. **Note:** *this list does not attempt to provide an exhaustive explanation, but rather represents an identification of the most appropriate sections from pertinent pieces of legislation*.

Table 3: Environmental Statutory Framework

Legislation	Description and Relevance
Constitution of the Republic of South Africa, (No. 108 of 1996)	• Chapter 2 – Bill of Rights. • Section 24 – Environmental Rights.
National Environmental Management Act (NEMA) (No. 107 of 1998)	• Section 24 – Environmental Authorisation (control of activities which may have a detrimental effect on the environment). • Section 28 – Duty of care and remediation of environmental damage. • Environmental management principles. • **Authorities – DEA (national) and Limpopo Department of Economic Development, Environment and Tourism (LDEDET) (provincial).**
GN No. R 982 of 4 December 2014	• Purpose - regulate the procedure and criteria as contemplated in Chapter 5 of NEMA relating to the preparation, evaluation,

Legislation	Description and Relevance
	submission, processing and consideration of, and decision on, applications for environmental authorisations for the commencement of activities, subjected to EIA, in order to avoid or mitigate detrimental impacts on the environment, and to optimise positive environmental impacts, and for matters pertaining thereto.
GN No. R. 983 of 4 December 2014 (Listing Notice 1) as amended	• Purpose - identify activities that would require environmental authorisations prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of NEMA. • The investigation, assessment and communication of potential impact of activities must follow a Basic Assessment process, as prescribed in regulations 19 and 20 of GN No. R 982 of 4 December 2014. However, according to Regulation 15(3) of GN No. R 982, S&EIR must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect of any of the activities.
GN No. R. 984 of 4 December 2014 (Listing Notice 2) as amended	• Purpose - identify activities that would require environmental authorisations prior to commencement of that activity and to identify competent authorities in terms of sections 24(2) and 24D of NEMA. • The investigation, assessment and communication of potential impact of activities must follow a Scoping and EIA process, as prescribed in regulations 21 - 24 of GN No. R 982 of 4 December 2014. • Activities under Listing Notice 2 that are relevant to this project are provided in **Table 4**.
GN No. R. 985 of 4 December 2014 (Listing Notice 3) as amended	• Purpose - list activities and identify competent authorities under sections 24(2), 24(5) and 24D of NEMA, where environmental authorisation is required prior to commencement of that activity in specific identified geographical areas only. • The investigation, assessment and communication of potential impact of activities must follow a Basic Assessment process, as prescribed in regulations 19 and 20 of GN No. R 982 of 4 December 2014. However, according to Regulation 15(3) of GN No. R 982, S&EIR must be applied to an application if the application is for two or more activities as part of the same development for which S&EIR must already be applied in respect of any of the activities. • Activities under Listing Notice 3 that are relevant to this project are provided in **Table 4**.
National Water Act (Act No. 36 of 1998)	• Chapter 3 – Protection of water resources. • Section 19 – Prevention and remedying effects of pollution. • Section 20 – Control of emergency incidents. • Chapter 4 – Water use. • **Authority – DWS.**
National Environmental Management Air Quality Act (Act No. 39 of 2004)	• Air quality management • Section 32 – Dust control. • Section 34 – Noise control. • **Authority – DEA.**
National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)	• Management and conservation of the country's biodiversity. • Protection of species and ecosystems. • **Authority – DEA**.
National Environmental Management: Protected Areas Act (Act No. 57 of 2003)	• Protection and conservation of ecologically viable areas representative of South Africa's biological diversity and natural landscapes.
National Environmental Management: Waste Act (Act No. 59 of 2008)	• Chapter 5 – licensing requirements for listed waste activities - GN No. R. 921 of 29 November 2013. • **Authority – Minister (DEA) or MEC (provincial authority)**

Legislation	Description and Relevance
National Forests Act (No. 84 of 1998)	• Section 15 – Authorisation required for impacts to protected trees. • **Authority – Department of Agriculture, Forestry and Fisheries (DAFF)**
Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)	• Permit required for borrow pits and quarries. • **Authority – Department of Mineral Resources (DMR).**
Occupational Health & Safety Act (Act No. 85 of 1993)	• Provisions for Occupational Health & Safety • **Authority – Department of Labour.**
National Heritage Resources Act (Act No. 25 of 1999)	• Section 34 – protection of structure older than 60 years. • Section 35 – protection of heritage resources. • Section 36 – protection of graves and burial grounds. • Section 38 – Heritage Impact Assessment for linear development exceeding 300m in length; development exceeding 5 000m^2 in extent, etc. • **Authority – Limpopo Provincial Heritage Resources Authority (LIHRA)**
Conservation of Agricultural Resources Act (Act No. 43 of 1983)	• Control measures for erosion. • Control measures for alien and invasive plant species. • **Authority – Department of Agriculture.**
National Road Traffic Act (Act No. 93 of 1996)	• **Authority – Limpopo Department of Public Works, Roads and Infrastructure.**

The relationship between the project and certain key pieces of environmental legislation is discussed in the subsections to follow.

8.1.2 Constitution of the Republic of South Africa (Act No. 108 of 1996)

The Constitution of the Republic of South Africa (Act No. 108 of 1996) is the supreme law of the land and provides amongst others the legal framework for legislation regulating coastal management in general. It also emphasises the need for co-operative governance. In addition, the Environmental clause in Section 24 of the Constitution provides that:

"Everyone has the right –

to an environment which is not harmful to their health or wellbeing;

to have the environment protected for the benefit of present and future generations through reasonable legislation and other measures that:

Prevent pollution and ecological degradation;

Promotes conservation;

Secure ecologically sustainable development and the use of natural resources while promoting justifiable economic and social development"

The Constitution provides the overarching framework for sustainable development.

8.1.3 National Environmental Management Act (Act No. 107 of 1998)

The proposed development requires authorisation in terms of the National Environmental Management Act (Act No. 107 of 1998) (NEMA), and the EIA will be undertaken in accordance with the 2014 EIA Regulations, as amended (07 April 2017).

Important aspects of NEMA are sustainability principles such as the “Polluter Pays” and the “Precautionary Principle” which will also be taken into account in the assessment of the impacts of the proposed development.

8.1.3.1 2014 EIA Regulations, as amended (07 April 2017)

The EIA Regulations consist of the following:

- EIA Procedures - GN No. R. 982;
- Listing Notice 1 - GN No. R. 983;
- Listing Notice 2 - GN No. R. 984; and
- Listing Notice 3 - GN No. R. 985.

The proposed Limpopo Central Hospital and associated infrastructure was screened in terms of NEMA, and triggered activities under Listing Notices 2 and 3, and thus needs to be subjected to a Scoping and EIA Process. The Listed Activities are explained in the context of the project in **Table 4**.

Table 4: EIA Listed Activities triggered by the proposed development

GN No. R.	Activity	Description as per GN	Applicability to the Project
984	15	The clearance of an area of 20 hectares or more of indigenous vegetation	The proposed site is approximately 21 Ha in extent and therefore exceeds the threshold of clearing more than 20 ha of indigenous vegetation, triggering this activity.
985	10 (e)(i)	The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres. e. Limpopo (i) all areas	Dangerous goods (fuel, oil etc.) will be stored on site for construction and operational phases. Emergency generators and bulk diesel tanks will be situated at the substation. Based on initial GBA of approximately 50 000m^2, normal load conditions and 48 hours back-up would require x1 16m^3 bulk tank and x 1 x 9m^3 unit. The following storage will be required at the main kitchen – 20 x 113L LPG Cylinders, and at the Laundry – 12500L LPG Horizontal Tank Total combined capacity of 65 m^3 falls within the thresholds

GN No. R.	Activity	Description as per GN	Applicability to the Project
			and thus triggers this Listed Activity

8.1.4 National Water Act (Act No. 36 of 1998)

The National Water Act (Act No. 36 of 1998) (NWA) regulates water resources of South Africa. Water is considered a scarce commodity and should therefore be adequately protected. Amongst others, the act deals with the protection of water sources, water uses, water management strategies and catchment management, dam safety and general powers and functions. The purpose of the act is to ensure that South Africa's water resources are protected, used, developed, conserved, managed and controlled. The NWA includes the definition of a Water Resource.

The NWA definition for a Water Resource includes:

1. A Watercourse;
2. Surface Water;
3. An Estuary; and
4. An Aquifer.

The NWA defines a watercourse as follows:

- A river or spring;
- A natural channel in which water flows regularly or intermittently;
- A wetland, lake or dam into which, or from which, water flows; and
- Any collection of water which the Minister may, by notice in the Gazette, declare to be a watercourse, and a reference to a watercourse include, where relevant, its bed and banks.

The Act also specifies that a wetland is defined as land which is transitional between terrestrial and aquatic systems where the water table is usually at or near the surface, or the land is periodically covered with shallow water, and which land in normal circumstances supports or would support vegetation typically adapted to life in saturated soil. Section 21 of the NWA provides information on what water uses require approval, i.e. a Water Use License (WUL). These include:

a) Taking water from a water resource;
b) Storing water;
c) Impeding or diverting the flow of water in a watercourse;
d) Engaging in a stream flow reduction activity;
e) Engaging in a controlled activity;
f) Discharging waste or water containing waste into a water resource through a pipe, canal, sewer, sea outfall or other conduit;

g) Disposing of waste in a manner which may detrimentally impact on a water resource;
h) Disposing in any manner of water which contains waste from, or which has been heated in, any industrial or power generation process;
i) Altering the bed, banks, course or characteristics of a watercourse;
j) Removing, discharging or disposing of water found underground if it is necessary for the efficient continuation of an activity or for the safety of people; and
k) Using water for recreational purposes.

The proposed Limpopo Central Hospital and associated infrastructure was screened in terms of NWA. The proposed site is not situated within a watercourse, nor within 500m of a wetland and will thus not require a WULA. However the associated infrastructure (power supply cable and sewer pipeline) outside the site boundary cross watercourses, however are situated within an existing road servitude and cross over existing bridges and culverts. Discussions will be held with DWS to confirm whether the associated infrastructure will require a WULA.

8.1.5 National Environmental Management: Protected Areas Act (Act No. 57 of 2003)

The aim of the National Environmental Management: Protected Areas Act (Act No. 57 of 2003) is to provide for the protection and conservation of ecologically viable areas representative of South Africa's biological diversity and natural seascapes. The purpose of a Protected Environment is amongst others to protect a specific ecosystem outside a special nature reserve world heritage site or nature reserve and also to ensure the use of the natural resources in the area is sustainable.

The proposed development does not occur near any formal Protected Areas according to the South African National Biodiversity Institute (SANBI). This is discussed further in **Section 12.9.** This Act will be considered in the Terrestrial Ecological Assessment to be included in the EIA report.

8.1.6 National Environmental Management: Biodiversity Act, 2004 (Act No. 10 of 2004)

The National Environmental Management: Biodiversity Act (Act No. 10 of 2004) was promulgated for the management and conservation of South Africa's biodiversity through the protection of species and ecosystems and the sustainable use of indigenous biological resources.

The main implication of this Act is the protection of biodiversity. The potential flora and fauna as well as the terrestrial ecosystems will be discussed further in **Section 12.9** and **12.10**. This Act will be considered in the Terrestrial Ecological Assessment to be included in the EIA Phase.

8.1.7 National Environmental Management: Air Quality Act (Act No. 39 of 2004)

The National Environmental Management: Air Quality Act (Act No. 39 of 2004) provides for the setting of national norms and standards for regulating air quality monitoring, management

and control and describes specific air quality measures so as to protect the environment and human health or well-being by:

- Preventing pollution and ecological degradation; and
- Promoting sustainable development through reasonable resource use.

It also includes measures for the control of dust, noise and offensive odours that may be relevant to the construction. No Air Emissions License will be required for the proposed development as no incinerator will be installed on site. The potential impacts of the hospital on air quality will be discussed in **Section 12.13.**

8.1.8 The National Environmental Management Waste Act (Act No. 59 of 2008)

The National Environmental Management Waste Act (Act No. 59 of 2008) (NEM:WA) regulates waste management in order to protect the health and environment of South African citizens. This is achieved through pollution prevention, institutional arrangements and planning matters, national norms and standards and the licensing and control of waste management activities.

The latest list of waste management activities that have or are likely to have a detrimental effect (GN No. 921 of 29 November 2013) contains activities listed in Categories A and B that would require licensing from the provincial or national authorities and activities contained in Category C which would require meeting the requirements of various Norms and Standards.

No authorisation will be required in terms of the NEM:WA, as the project will not include any of the listed waste management activities.

The following is noted with regards to waste management for the proposed Limpopo Central Hospital:

- Construction Phase –
    - The storage of general or hazardous waste in a waste storage facility at the construction camp will comply with the norms and standards in GN No. R. 926 of 29 November 2013;
    - The Environmental Management Programme (EMPr) will make suitable provisions for waste management, including the storage, handling and disposal of waste;
- Operational Phase –
    - The storage of general and hazardous waste at the waste management facility will comply with the norms and standards in GN No. R. 926 of 29 November 2013;
    - It is assumed that the recycling of general waste at the waste management facility on site will not exceed an operational area of 500m^2 and will thus not trigger any waste management activities under Category A;
    - It is assumed that the recycling of hazardous waste at the waste management facility on site will not be in excess of 500kg per day calculated as a monthly average, and will thus not trigger any waste management activities under Category A;

- The Environmental Management Programme (EMPr) will make suitable provisions for waste management, including the storage and handling of general and hazardous waste (including HCRW) on site.

According to the National Health Care Risk Waste Management Regulations (GN No. R.463 of 30 April 2018), the term 'Health Care Risk Waste' (HCRW) means any waste which is produced in the diagnosis, treatment or immunization of human beings or animals, or waste that has been in contact with blood, bodily fluids or tissues from humans, or infected animals from veterinary practices and includes but is not limited to the following categories –

(a) Infectious waste;
(b) Pathological waste;
(c) Laboratory waste;
(d) Genotoxic waste;
(e) Sharps waste;
(f) Chemical waste;
(g) Pharmaceutical waste; and
(h) Radioactive waste.

The term 'major generator' means a generator of health care risk waste that generates in excess of 20 kilograms (including weight of the container) per day calculated monthly as a daily average. The proposed hospital is classified as a 'major generator', as it will generate health care risk waste in excess of 20kg per day, and thus the storage and handling of this waste will comply with the regulations as stipulated in the National Health Care Risk Waste Management Regulations (GN No. R.463 of 30 April 2018). As a major generator, the hospital will have to register on the South African Waste Information System (SAWIS). In terms of the Regulations relating to Health Care Waste Management in Health Establishments (GN No. R. 375 of 23 May 2014) sub regulation 6(1) states that each health care waste major generator shall have a health care waste management plan in place, and the contents of that plan will comply to the aforementioned regulation.

8.1.9 Hazardous Substances Act (Act No. 05 of 1973)

The Hazardous Substances Act (Act No. 05 of 1973) provides 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, and for the control of certain electronic products; to provide for the division of such substances or products 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 products; and to provide for matters connected therewith.

8.1.10 Occupational Health & Safety Act (Act No. 85 of 1993)

The Occupational Health and Safety Act (Act No. 85 of 1993) provides for the health and safety of people at work as well as the health and safety of persons using plant and machinery.

8.1.11 National Heritage Resources Act (Act No. 25 of 1999)

The National Heritage Resources Act (Act No. 25 of 1999) was promulgated for the protection of National Heritage Resources and the empowerment of civil society to conserve their heritage resources.

The proposed construction of the Limpopo Central Hospital will trigger certain categories as listed below that require a Heritage Impact Assessment in terms of Section 38 of the National Heritage Resources Act. These categories are:

(a) the construction of a road, wall, power line, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;

(b) the construction of a bridge or similar structure exceeding 50m in length;

(c) any development or other activity which will change the character of a site

> **(i) exceeding 5 000 m^2 in extent;** or
>
> (ii) involving three or more existing erven or subdivisions thereof; or
>
> (iii) involving three or more erven or divisions thereof which have been consolidated within the past five years; or
>
> (iv) the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority;

(d) the rezoning of a site exceeding 10 000 m^2 in extent; or

any other category of development provided for in regulations by SAHRA or a provincial heritage resources authority, must at the very earliest stages of initiating such a development, notify the responsible heritage resources authority and furnish it with details regarding the location, nature and extent of the proposed development.

The Act also makes provision for General Protections, which apply automatically to certain categories of heritage resources such as archaeological and paleontological sites, cemeteries and graves, and structures older than 60 years.

Heritage resources in the study area will be discussed further in Section 12.15. This Act will be considered in the Heritage Impact Assessment to be included in the EIA Report.

8.1.12 Minerals and Petroleum Resources Development Act (Act No. 28 of 2002)

The Mineral and Petroleum Resources Development Act (Act No. 28 of 2002) (MPRDA) sets out the requirements with which applicants for prospecting rights, mining rights and mining permits must comply in Sections 16, 22 and 27 of the MPRDA.

A Mining Permit will not be required as no borrow pits will be required and all construction material will be commercially sourced.

8.2 Guidelines

The following guidelines were considered during the preparation of the Scoping Report:

- Integrated Environmental Management Information Series, in particular Series 2 – Scoping (DEAT, 2002);
- Guideline on Alternatives, EIA Guideline and Information Document Series (DEA&DP, 2010a);
- Guideline on Need and Desirability, EIA Guideline and Information Document Series (DEA&DP, 2010b);
- Integrated Environmental Management Guideline Series 7: Public Participation in the EIA Process (DEA, 2010); and
- Guidelines for Involving Specialists in the EIA Processes Series (Brownlie, 2005).

8.3 National and Regional Plans

The following regional plans were considered during the execution of the Scoping phase (amongst others):

- District and Municipal Spatial Development Frameworks (SDFs) (where available);
- District and Municipal Integrated Development Plans (IDPs);
- Relevant national, provincial, district and local policies, strategies, plans and programmes;
- Limpopo Provincial Conservation Plan version 2, September 2013; and
- Limpopo Provincial Growth and Development Strategy (PGDS).
- Limpopo Integrated Waste Management Plan, 2016.

9 SCOPING AND EIA PROCESS

9.1 2014 EIA Listed Activities (as amended)

The proposed Limpopo Central Hospital entails certain activities that require environmental authorisation in terms of NEMA. Refer to Section 8 for a further discussion on the legal framework. The process for seeking authorisation is undertaken in accordance with the 2014 EIA Regulations, as amended (07 April 2017), promulgated in terms of Chapter 5 of NEMA. Based on the types of activities involved, which include activities listed in GN No. R. 983, R. 984 and R. 985 (see **Table 4**)**,** the requisite environmental assessment for the project is a Scoping and EIA Process.

9.2 Formal Process

The environmental assessment process is divided into two phases, namely: 1) Scoping (current); and 2) EIA. An outline of the Scoping and EIA Process for the proposed Limpopo Central Hospital is provided in **Figure 12**.

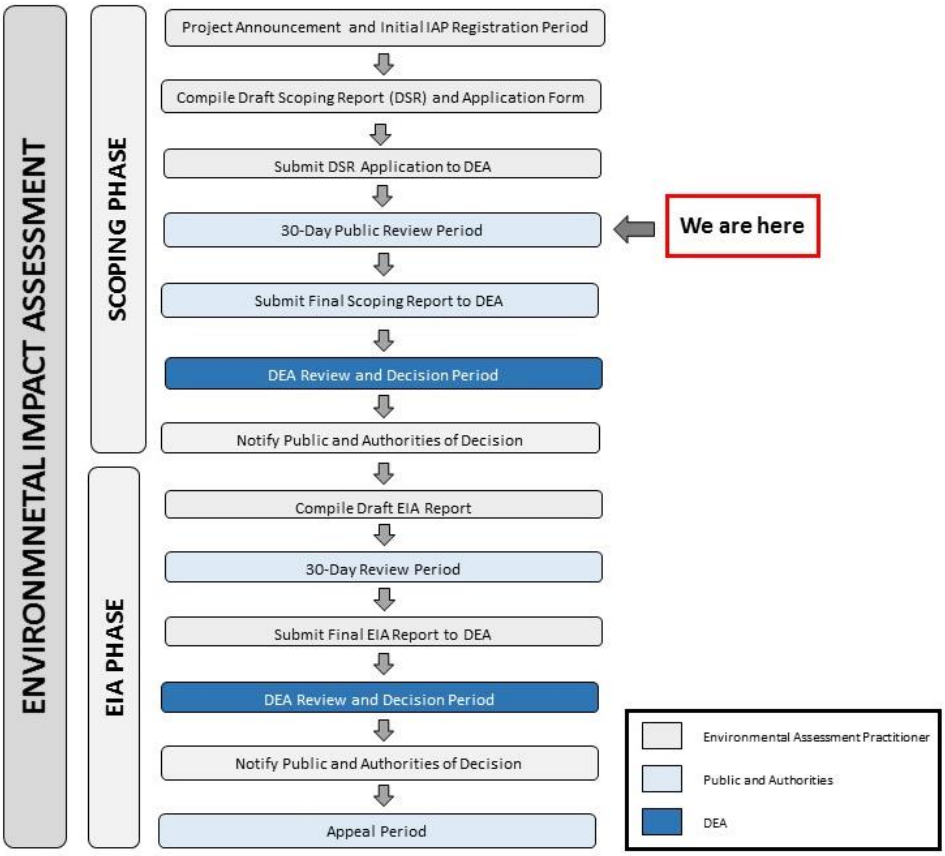


Figure 12: Scoping and EIA Process

9.3 Competent Authority

In terms of the Regulations, the lead decision-making authority for the Scoping and EIA is DEA, as the project proponent is the National Department of Health.

9.4 Application Form

The Application for Environmental Authorisation for the proposed Limpopo Central Hospital will be submitted to DEA, accompanying the Draft Scoping Report. The acknowledgement letter of the Application Form and Draft Scoping Report from DEA will be included in the Final Scoping Report. Refer to **Appendix D** for a copy of the DEA Application Form.

9.5 Scoping Phase

The purpose of Scoping, which constitutes the first phase of the formal EIA Process, is as follows:

1. Introduce the proposed project to all IAPs;
2. Engage with IAPs to allow for participation in the process that is transparent, cooperative, informative and robust. Allow for informed decision-making with regard to the EIA process;
3. Identify the significant issues and impacts to be investigated further during the execution of the EIA phase;
4. Consider suitable and feasible alternatives for achieving the project's objectives; and
5. Determine the scope of the ensuing EIA phase in terms of specialist studies, public participation, and assessment of impacts and appraisal of alternatives.

In order to meet the above, the DSR provides the following information:

- Motivation on the Need and Desirability of the proposed development;
- Clarity on the roles and responsibilities of the various stakeholders in the project;
- Information on the Public Participation Process;
- Information on the Scoping and EIA processes;
- Description on how the proposed development will be undertaken (if approved);
- Information on the legislation that has been considered;
- Information on the Receiving Environment that could be affected by the proposed project;
- Information on Alternatives which are being considered;
- Proposed methodology of assessing the potential impacts during the EIA Phase;
- Findings on the type of Specialist Studies required in the pending EIA Phase; and

Proposed Plan of Study for the pending EIA Phase of the project.

9.6 EIA Phase

The EIA phase, which constitutes the second phase of the formal EIA Process, serves to follow from the Scoping phase and will provide the following:

- A detailed description of the proposed development and location;
- A description of the environment that may be affected by the activity and the manner in which physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed development;
- The methodology of the stakeholder engagement process will be described;
- The CRR and Stakeholder Database will be provided as an appendix to the EIA Report;

- A description of the need and desirability of the proposed development and the identified potential alternatives to the proposed activity;
- A summary of the methodology used in determining the significance of potential impacts;
- A description and comparative assessment of the project alternatives;
- A summary of the findings of the specialist studies (Copies of all specialist reports appended to the EIA Report);
- A detailed assessment of all identified potential impacts;
- A list of the assumptions, uncertainties and gaps in knowledge;
- An opinion by the consultant as to whether the development is suitable for approval within the proposed site;
- An EMPr that complies with Appendix 4 of GN No. R. 982 of the 2014 EIA Regulations (as amended); and
- Any further information that will assist in decision making by the authorities.

9.7 Landowner Consent

According to Regulation 39(1) of GN No. 982 of the 2014 EIA Regulations, as amended, if the proponent is not the owner or person in control of the land on which the activity is to be undertaken, the proponent must, before applying for an environmental authorisation in respect of such activity, obtain the written consent of the landowner or person in control of the land to undertake such activity on that land.

This requirement does not apply for a Strategic Integrated Project (SIP) as contemplated in the Infrastructure Development Act, 2014. The proposed Limpopo Central Hospital qualifies under SIP 12 and thus landowner consent is not required.

10 Assumptions and Limitations

The following assumptions and limitations accompany the Scoping exercise:

- In accordance with the purpose of Scoping, the report does not include detailed specialist investigations on the receiving environment, which will only form part of the EIA phase. The environment in the project area was primarily assessed in the Scoping phase through site visits and appraisals, desktop screening, incorporating existing information from previous studies, and input received from authorities and IAPs. A refinement of all maps will also be undertaken in the EIA phase, if necessary.
- As the design of the project components is still in feasibility stage, and due to the dynamic nature of the planning environment, the dimensions and layout of the infrastructure may change during the detailed design phase. Any amendments to the scheme will need to comply with the prevailing environmental legal requirements.

11 NEED AND DESIRABILITY

In terms of 2(1)(f) of Appendix 2 of GN No. R. 982 of the 2014 EIA Regulations, as amended, this section discusses the need and desirability of the project. The format contained in the Guideline on Need and Desirability (DEA&DP, 2009) has been used in **Table 5**.

Table 5: Need and Desirability for the Proposed Limpopo Central Hospital

No.	Question	Response
	NEED ('timing')	
1.	Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved Spatial Development Framework (SDF) agreed to by the relevant environmental authority? (i.e. is the proposed development in line with the projects and programmes identified as priorities within the IDP).	The SDF for the Polokwane LM (2017) acknowledges the need for the LCH and specifically states under social services as part of the proposed strategic thrusts for local economic development: *"Implementation of academic hospital in Polokwane"*
2.	Should development, or if applicable, expansion of the town/area concerned in terms of this land use (associated with the activity being applied for) occur here at this point in time?	Refer to response for item 1 above.
3.	Does the community/area need the activity and the associated land use concerned (is it a societal priority)? This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate)	• Based on the National Service Delivery Agreement, the current public health infrastructure cannot adequately support the service delivery needs of the country; • The proposed Limpopo Central Hospital features within SIP 12: Revitalisation of public hospitals and health facilities; • Polokwane SDF mentions the implementation of the academic hospital as part of the strategic thrusts to enhance local economic development within the LM; and • Polokwane IDP states that improved health care is part of the LMs Medium Term Strategic Framework (MTSF).
4.	Are the necessary services with appropriate capacity currently available (at the time of application), or must additional capacity be created to cater for the development?	Water and sanitation networks will be tied in to existing infrastructure with adequate capacity. The main power supply to the site will be obtained from the Beta Substation located in Suid Street. Sufficient capacity is available from this substation to allow for a 12MVA connection to the site. All services required for the development of the proposed hospital, are explained in **Section 7.3**.
5.	Is this development provided for in the infrastructure planning of the municipality, and if not what will the	The project aims to improve the health care and tertiary services in the Local Municipality. See the response in item no. 1 above in terms of the reference

No.	Question	Response
	implication be on the infrastructure planning of the municipality (priority and placement of services)?	to the proposed LCH in the Polokwane LM's SDF and IDP.
6.	Is this project part of a national programme to address an issue of national concern or importance?	Yes. The proposed Limpopo Central Hospital features within SIP 12: Revitalisation of public hospitals and health facilities
DESIRABILITY ('placing')		
7.	Is the development the best practicable environmental option (BPEO) for this land/site?	The proposed site is situated within an urban developed area, between existing schools (New Horizon and Northern Academy Secondary School), residential areas and roads (Webster and Suid Street), and runs parallel to the N1 Polokwane bypass.
8.	Would the approval of this application compromise the integrity of the existing approved municipal IDP and SDF as agreed to by the relevant authorities?	It is not anticipated that the proposed project will contradict or be in conflict with the municipal IDPs and SDFs (refer to response provided above to item no. 1).
9.	Would the approval of this application compromise the integrity of the existing environmental management priorities for the area (e.g. as defined in EMFs), and if so, can it be justified in terms of sustainability considerations?	According to the Capricorn DM Bioregional Plan (2018) the proposed site falls within zones classified as 'towns and settlements'. Refer to **Section 12.9.1.3** for a discussion of the project in relation to Critical Biodiversity Areas.
10.	Do location factors favour this land use (associated with the activity applied for) at this place? (this relates to the contextualisation of the proposed land use on this site within its broader context).	Refer to response on item 7 above.
11.	How will the activity or the land use associated with the activity applied for, impact on sensitive natural and cultural areas (built and rural/natural environment)?	Refer to a discussion of the status quo of the built, natural and socio-economic environment, and potential impacts in **Section 12**. See compilation of significant environmental issues associated with the proposed project contained in **Section 14**.
12.	How will the development impact on people's health and wellbeing (e.g. in terms of noise, odours, visual character and sense of place, etc.)?	
13.	Will the proposed activity or the land use associated with the activity applied for, result in unacceptable opportunity costs?	Opportunity costs, which are associated with the net benefits forgone for the development, will be considered in the Socio-economic Study during EIA phase.
14.	Will the proposed land use result in unacceptable cumulative impacts?	All possible cumulative impacts are discussed in **Section 14.3**.

12 PROFILE OF THE RECEIVING ENVIRONMENT

12.1 General

This section provides a general description of the status quo of the receiving environment in the project area. This serves to provide the context within which the Scoping exercise was conducted. It also allows for an appreciation of sensitive environmental features and possible receptors of the effects of the proposed Limpopo Central Hospital.

Where necessary, the regional context of the environmental features is also explained, with an ensuing focus on the local surrounding environment. More in-depth discussions on the receiving environment will be provided in the EIA Report, where the findings of the requisite specialist studies will be incorporated into the document.

A brief overview is also provided of the manner in which the environmental features may be affected (positively or negatively) by the proposed Limpopo Central Hospital during the project life-cycle. Key environmental issues are discussed further in **Section 14**. These preliminary effects are only discussed concisely on a qualitative level, as part of the Scoping Phase. The EIA Report will provide a comprehensive evaluation of the potential impacts, and will quantify the effects to the environment based on the methodology presented in **Section 15**.

The following environmental features have been considered:

1. Land Use and Land Cover
2. Climate;
3. Geology;
4. Soil;
5. Topography;
6. Surface Water;
7. Flora;
8. Fauna;
9. Land Capability;
10. Land Use;
11. Heritage;
12. Air Quality;
13. Noise;
14. Visual Quality;
15. Traffic;
16. Socio-Economic

12.2 Land Use & Land Cover

12.2.1 Status Quo

The dominant land cover in the area earmarked for the project infrastructure is shown in **Figure 13**. The 2013-14 South African National Land-cover dataset produced by GEOTERRAIMAGE shows that the proposed site falls mainly within land cover classified as open bush and grassland. Further information will be included in the EIA Report.

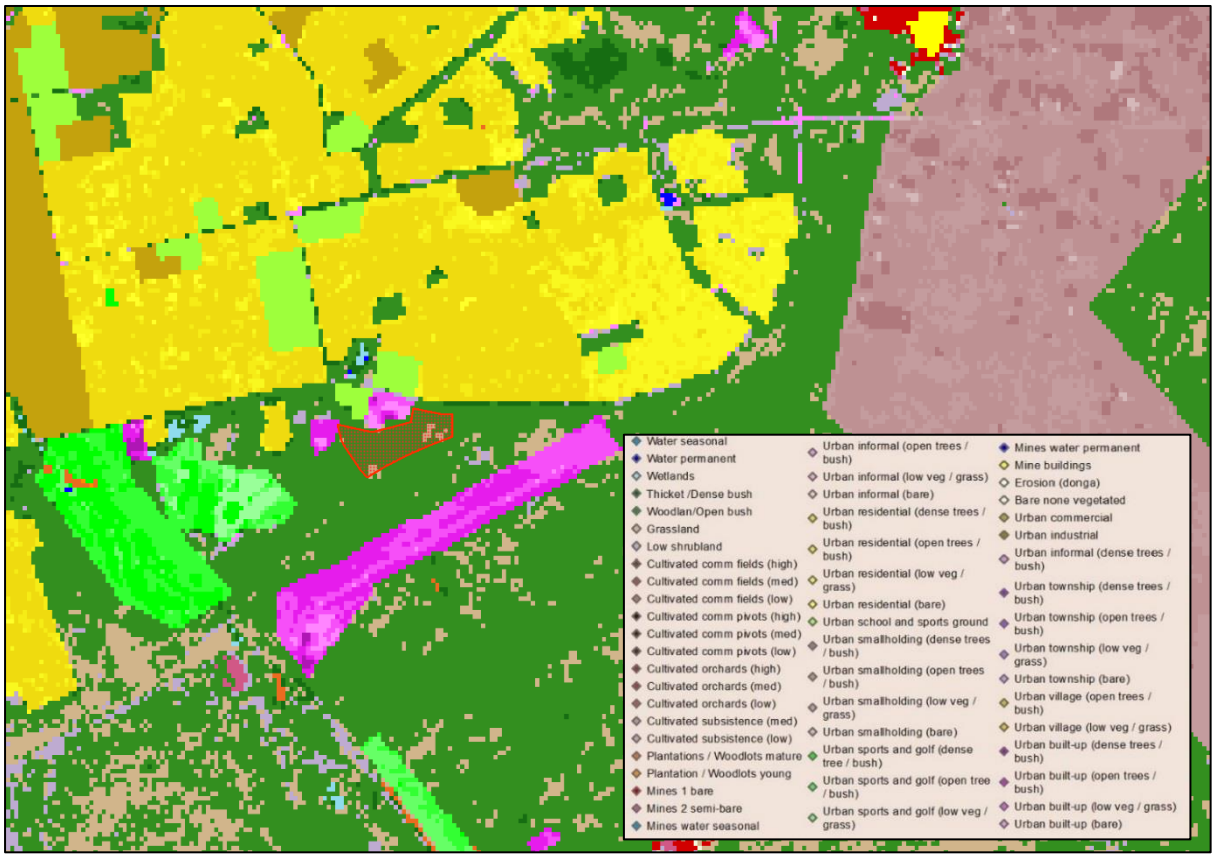


Figure 13: Land Cover Map (GEOTERRAIMAGE)

12.2.2 Potential Impacts/Implications

According to **Figure 13**, the proposed site falls mainly within land cover classified as open bush/grassland, which will be cleared during the construction phase and result in the permanent loss of the current land cover situated within the project footprint.

12.2.3 Specialist Study Triggered / Additional Investigations

Specialist studies to be conducted in the EIA phase that will consider land use and land cover include the following:

- Agricultural Impact Assessment; and
- Terrestrial Ecological Impact Assessment.

12.3 Climate

12.3.1 Status Quo

12.3.1.1 Precipitation

According to **Figure 14**, the area experiences summer rainfall with the highest precipitation occurring during the months of December and January (110 mm), and the lowest precipitation occurring between June and August (< 5 mm). Average precipitation for the area is 598 mm per annum.

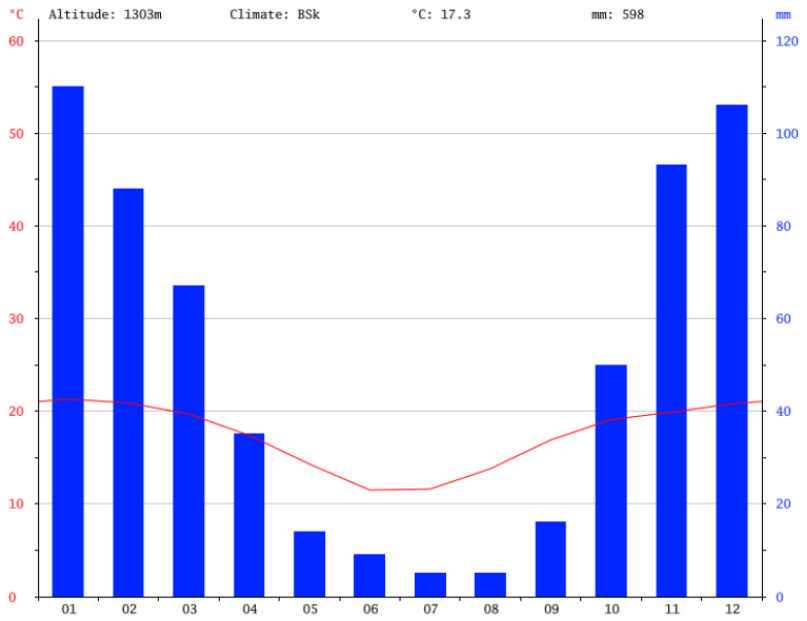


Figure 14: Precipitation in Polokwane LM (https://en.climate-data.org/africa/south-africa/limpopo/polokwane-3759/)

12.3.1.2 Temperature

According to **Table 6** below, the highest temperatures occur from December – February, whereas the coldest temperatures occur from June – July. The highest average temperature occurs in January (21.3 °C) and lowest temperature occurs in July (3.8 °C). The area experiences an average annual temperature of 17.3 °C.

Table 6: Temperature in Polokwane LM (https://en.climate-data.org/africa/south-africa/limpopo/polokwane-3759/)

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	21.3	20.9	19.7	17.4	14.3	11.5	11.6	13.8	16.9	19.1	19.9	20.8
Min. Temperature (°C)	16	15.6	14.2	11.3	7.1	3.9	3.8	6	9.4	12.6	14.3	15.4
Max. Temperature (°C)	26.6	26.2	25.3	23.6	21.5	19.1	19.4	21.6	24.4	25.6	25.5	26.2

12.3.2 Potential Impacts/Implications

There are no direct adverse impacts foreseen in terms of the project to climate. However, measures to reduce the project's carbon footprint will be considered further in the EIA phase.

12.3.3 Specialist Study Triggered/Additional Investigations

The EMPr will contain measures to minimise the carbon footprint of the hospital.

12.4 Geology

12.4.1 Status Quo

Refer to the simplified geological map in **Figure 15**.

Figure 15: Geology Map

Stratigraphy

Based on the findings of the geotechnical study (AGES, 2010a) the study area is underlain by leucocratic migmatite and gneiss, grey- and pink hornblende-biotite gneiss, grey biotite gneiss, minor muscovite-bearing granite, pegmatite and gneiss, collectively known as the Hout River Gneiss. These strata generally dip towards the south at an angle of approximately 45°. Occasional roughly east-west trending lenses of talc-chlorite and amphibolite-chlorite schist, amphibolite and Serpentinite, collectively known as the Mothiba Formation of the Pietersburg group, Murchison Supergroup, may cut through the area.

Structural Geology

The study area does not reflect a risk for the formation of sinkholes or subsidence caused by the presence of water-soluble rocks, and as such is seen as “non-dolomitic land”. The results of geophysical surveys conducted as part of a Geohydrological assessment of the area confirmed the occurrence of four weakly defined dyke intrusions within the study area.

12.4.2 Potential Impacts/Implications

According to the geotechnical study (AGES, 2010a), no adverse geological conditions are expected that would prohibit the construction of the proposed Limpopo Central Hospital.

- The following impacts could be expected during the construction phase:
  - Blasting (depending on geotechnical conditions);
  - Removal of spoil from excavations.

12.4.3 Specialist Studies Required

- Geotechnical Study undertaken as part of the feasibility study; and
- The EMPr will contain measures to mitigate against impacts to geology, and will also include measures and recommendations provided by the Geotechnical study.

12.5 Soils

12.5.1 Status Quo

Soil classes encountered in the project area are shown in **Figure 16**. The site is situated within soils classified as class S2: freely drained, structureless soil.

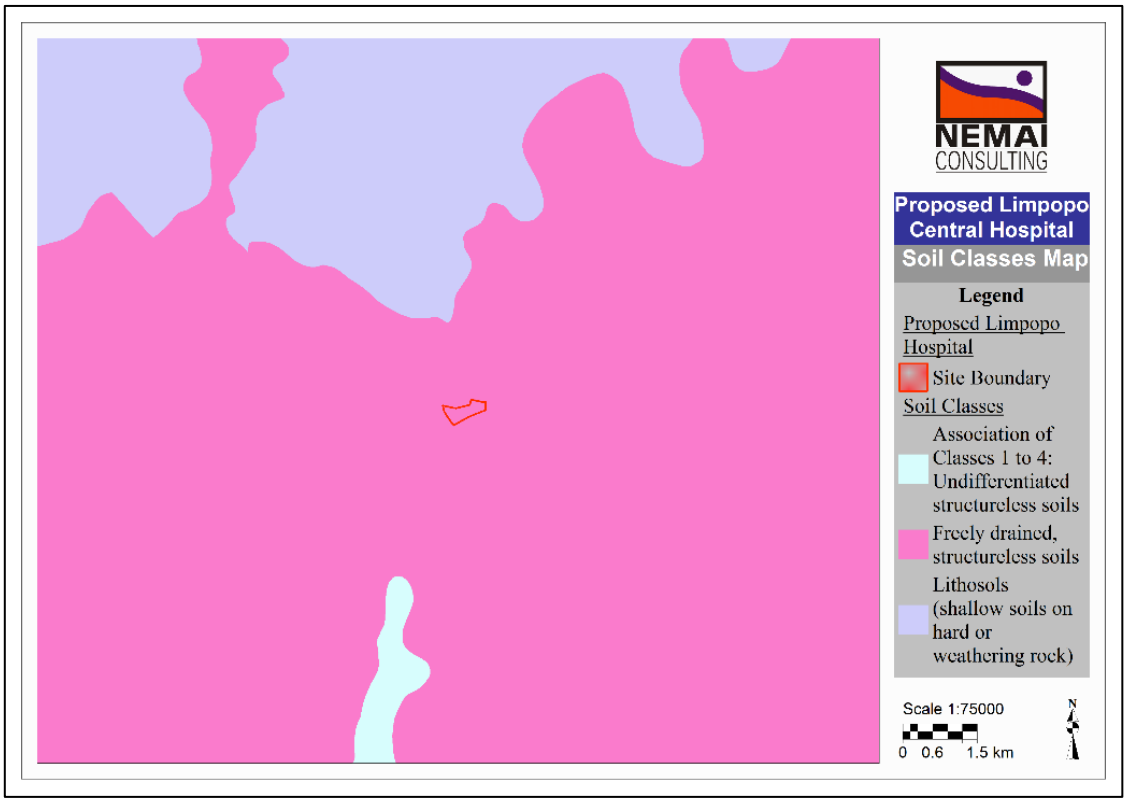


Figure 16: Soil Classes Map

12.5.2 Potential Impacts/Implications

- During the construction phase:
  - A large area will be cleared of vegetation, which may lead to soil erosion;
  - Soil could also be contaminated through inadequate storage and handling of hazardous materials, spillages from equipment and plant and poor management of waste and wastewater;
  - Where construction activities will take place in terrain that is characterised by steeper gradient, erosion could take place in the absence of suitable stormwater management;
  - Vehicles travelling on the construction roads, as well as materials stored in the laydown area will cause compaction of soil, which decreases soil fertility.

12.5.3 Specialist Studies Required

- Details on soil types and soil potential will be provided in the Agricultural Impact Assessment;
- The EMPr will contain measures to mitigate against impacts to soil, for example the management of topsoil, preventing soil contamination during construction, etc.
- The EMPr will include measures and recommendations provided by the Geotechnical study.

12.6 Geohydrology

12.6.1 Status Quo

Based on the findings from the geotechnical study (AGES, 2010a) the weathered gneiss bedrock underlying the study area represents a weathered and fractured aquifer where groundwater rest level occurs along fractures within the weathered bedrock at depth. Groundwater yields of between 0.3 and 3 l/s are expected for successful boreholes, with static groundwater levels of between 10 and 30 mbdl reported.

Significant groundwater seepage was not encountered in the test pits or core boreholes. However, the presence of weakly ferruginized material at relatively shallow depth throughout the area indicates the weak seasonal formation of perched water tables within the topsoil overlying the less permeable weathered bedrock directly after heavy precipitation events. This may persist for a while into the drier months following the annual rainy season.

A Geohydrological investigation (AGES, 2010b) was conducted and evaluated the groundwater conditions on the proposed site. The investigation drilled two boreholes on the site (**Figure 17**) and water samples from the boreholes were tested for water quality.

Figure 17: Borehole Locality Map (AGES, 2010b)

12.6.2 Potential Impacts/Implications

- Impacts to the resource quality of the affected groundwater resources during the construction phase could include:
  - Potential disturbance of the aquifer from blasting (if required).
  - Potential contamination of groundwater during the construction stage from spillages or poor storage of oils, fuels etc.
  - Possible influence to groundwater flow as a result of trenching during construction.

12.6.3 Specialist Studies Required

The EMPr will contain measures to mitigate against impacts to groundwater, for example preventing groundwater contamination during construction. The EMPr will also include measures and recommendations provided by the Geohydrological study.

12.7 Topography

12.7.1 Status Quo

The proposed site is situated on a relatively flat area. Refer to **Figure 18**. According to the findings from the geotechnical study (AGES, 2010a), the site is located within an area deemed a gently undulating plain composed of low ridges with rounded crests exhibiting gentle side slopes separated by occasional shallow valleys associated with non-perennial streams. The study area itself is placed along the very gently dipping mid slope of a localized ridge occurring to the southeast. The area exhibits an average slope of approximately 1° to the northwest.

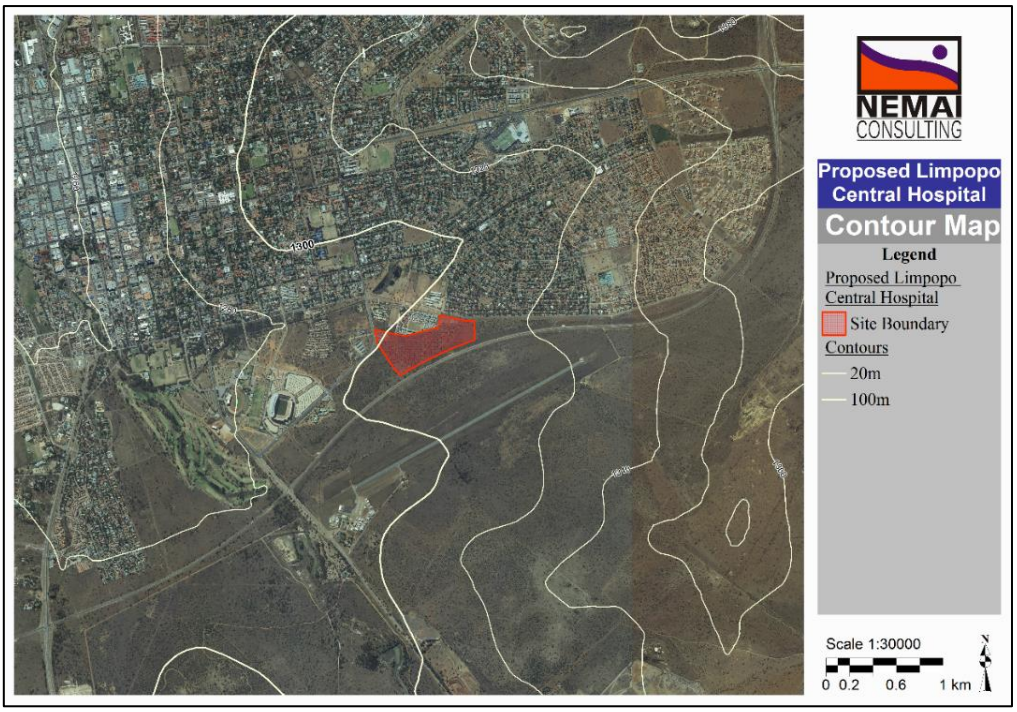


Figure 18: Contour Map (20m interval)

The minimum elevation is situated on the western side of the site (1304m) and the maximum elevation situated on the eastern side (1312m). Refer to **Figure 19** below.

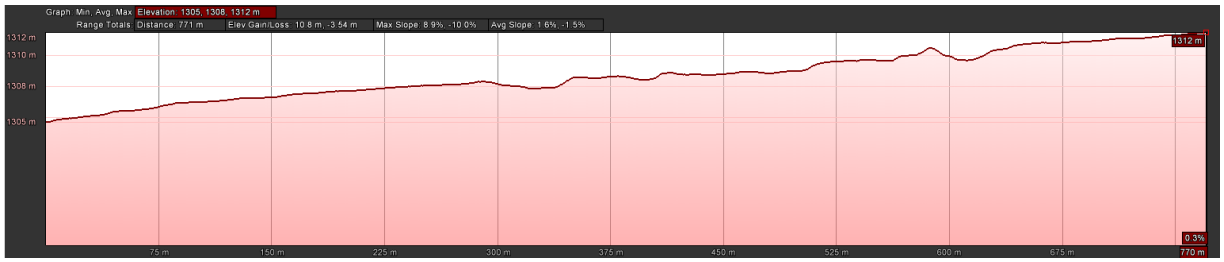


Figure 19: Google Earth Elevation Profile (West to East)

12.7.2 Potential Impacts/Implications

Erosion can occur where construction activities take place in terrain that is characterised by steep gradients, in the absence of suitable stormwater management and stabilisation of the cut and fill areas.

12.7.3 Specialist Studies Required

The EMPr will make provision for erosion protections, stormwater management, reinstatement and rehabilitation.

12.8 Surface Water

12.8.1 Status Quo

12.8.1.1 Water Management Areas

As per **Figure 20** below, the proposed site is situated within the Limpopo Water Management Area (WMA), and within the quaternary catchment: A71A.

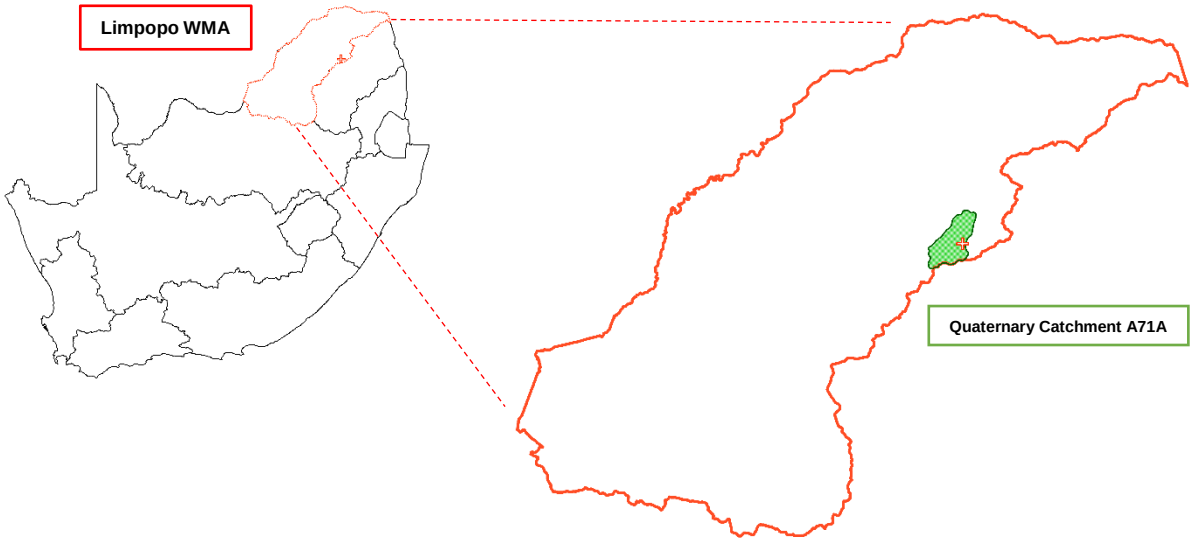


Figure 20: Limpopo WMA and quaternary catchments

12.8.1.2 Rivers/Wetlands

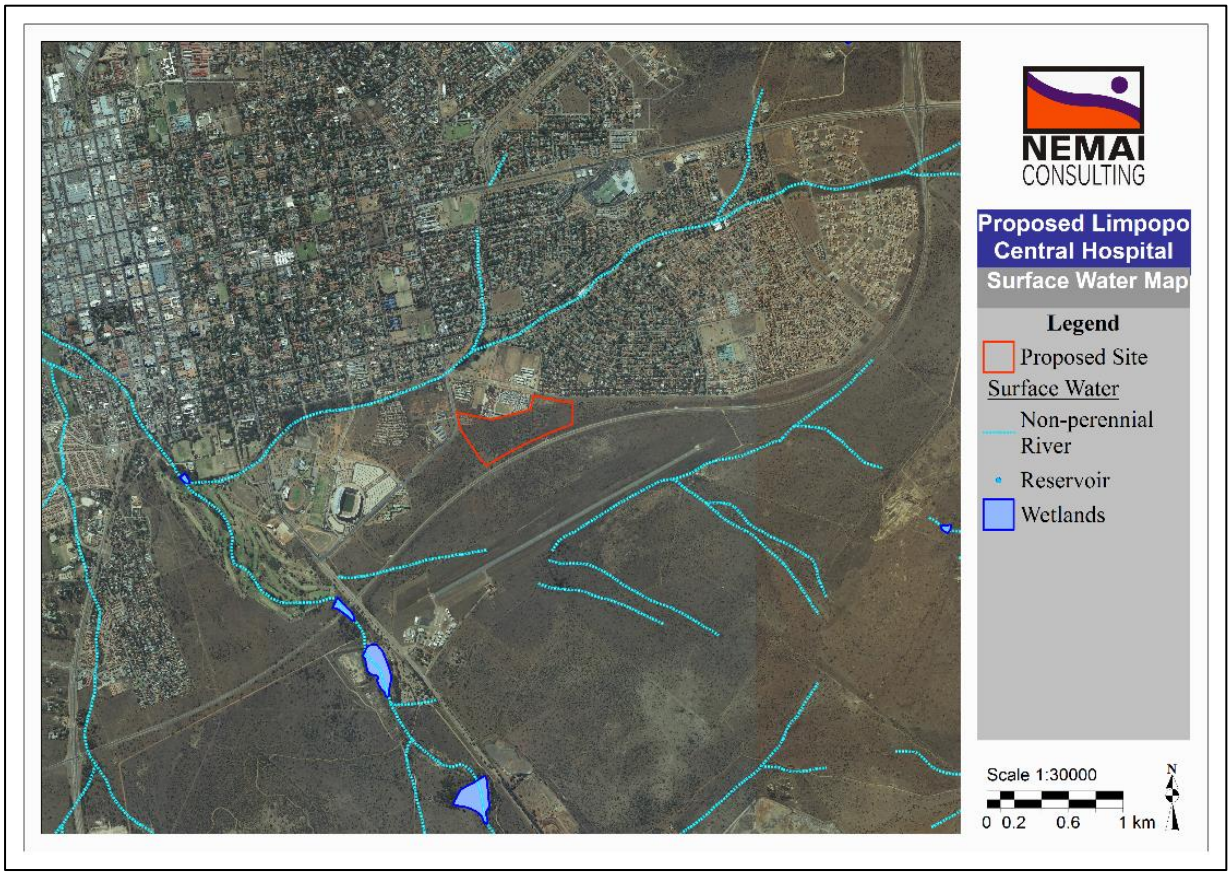


Figure 21: Surface Water Map

According to **Figure 21**, the proposed site does not contain any watercourses on site, with the nearest non-perennial river situated 300m to the north of the site.

Although no activities within the site boundary are expected to encroach upon the regulated area of a watercourse (i.e. 1:100 year floodline / delineated riparian or 500 m of a wetland habitat), should this change through a change of scope, a water use authorisation might be required in terms of Section 21 of the National Water Act (Act No. 36 of 1998).

12.8.2 Potential Impacts/Implications

During the construction phase, potential contamination of surface water could occur through improper practices (e.g. poor management of waste water and disposal of solid waste) and stormwater management.

12.8.3 Specialist Studies Required

- Aquatic and Wetland Impact Assessment to be conducted in the EIA phase which will include an appraisal of the riparian habitat, and watercourses will be delineated as part of the aforementioned study.
- EMPr to include mitigation measures in order to manage stormwater, and minimise impacts to surrounding watercourses.

12.9 Flora

12.9.1 Status Quo

12.9.1.1 Regional Vegetation

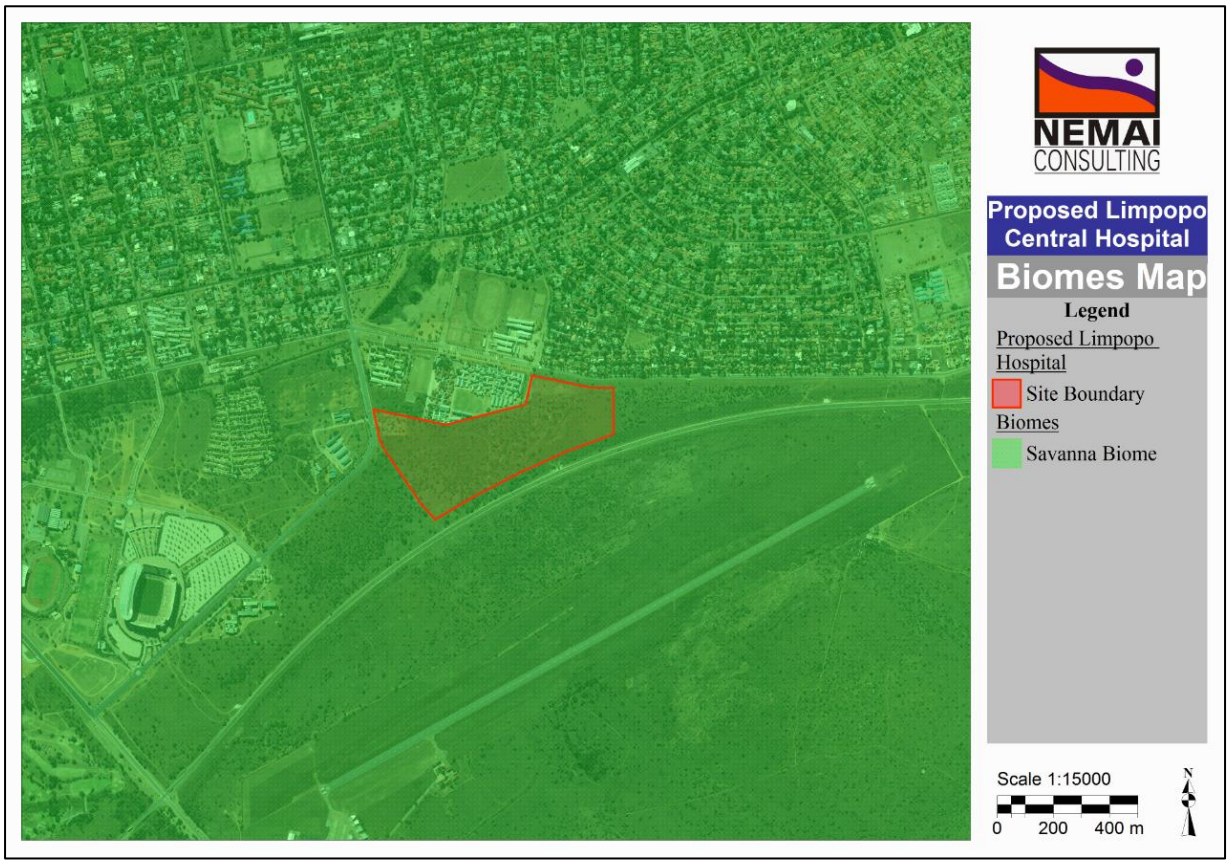


Figure 22: Savanna Biome Map

Mucina and Rutherford (2016) described the study area as falling within the Savanna Biome (**Figure 22**). The Savanna Biome is the largest Biome in southern Africa, occupying 46% of its area, and over one-third the area of South Africa. It is well developed over the lowveld and Kalahari region of South Africa and is also the dominant vegetation in Botswana, Namibia and Zimbabwe. It is characterized by a grassy ground layer and distinct upper layer of woody plants (Low and Rebelo, 1996).

The proposed site is situated within the Polokwane Plateau Bushveld (**Figure 23**). According to Mucina and Rutherford, 2006, the Polokwane Plateau Bushveld vegetation type is found in Limpopo Province in the higher-lying plains around Polokwane, north of the Strydpoort Mountains and south of the SVcb 20 Makhado Sweet Bushveld.

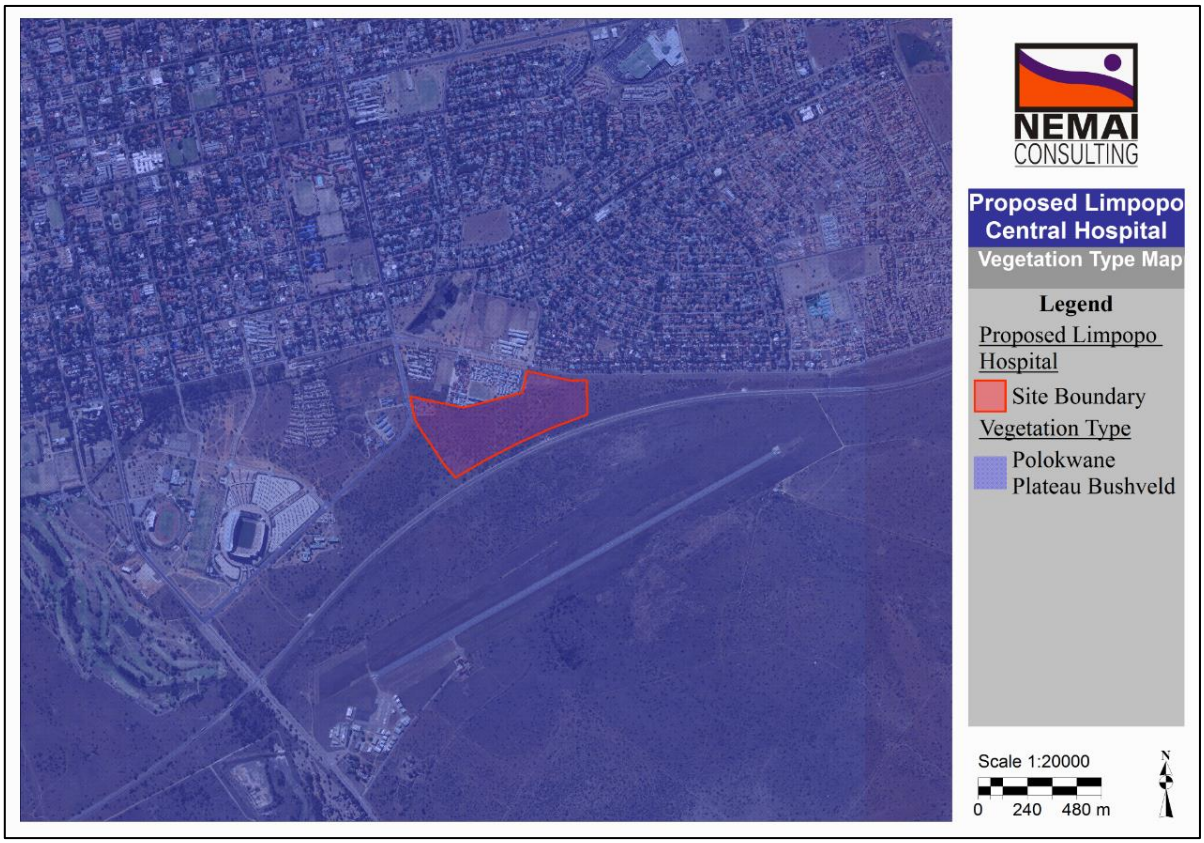


Figure 23: Vegetation Type Map

The conservation status of this vegetation type is classified as **least threatened** with a national conservation target of 19%.

Less than 2% is statutorily conserved mainly in the Percy Fyfe and Kuschke Nature Reserves. In addition, 0.7% is conserved in other reserves, for example the Polokwane Game Reserve. Some 17% is transformed, including about 10% cultivated and 6% urban and built-up. Dense concentration of rural human settlements is found particularly in the eastern and north-western parts of the vegetation unit.

12.9.1.2 Threatened Ecosystems

According to the data sourced from SANBI, no terrestrial threatened ecosystems were recorded in the project area, with the closest to the site being the Woodbush Granite Grassland, approximately 40km east of the proposed site (**Figure 24**).

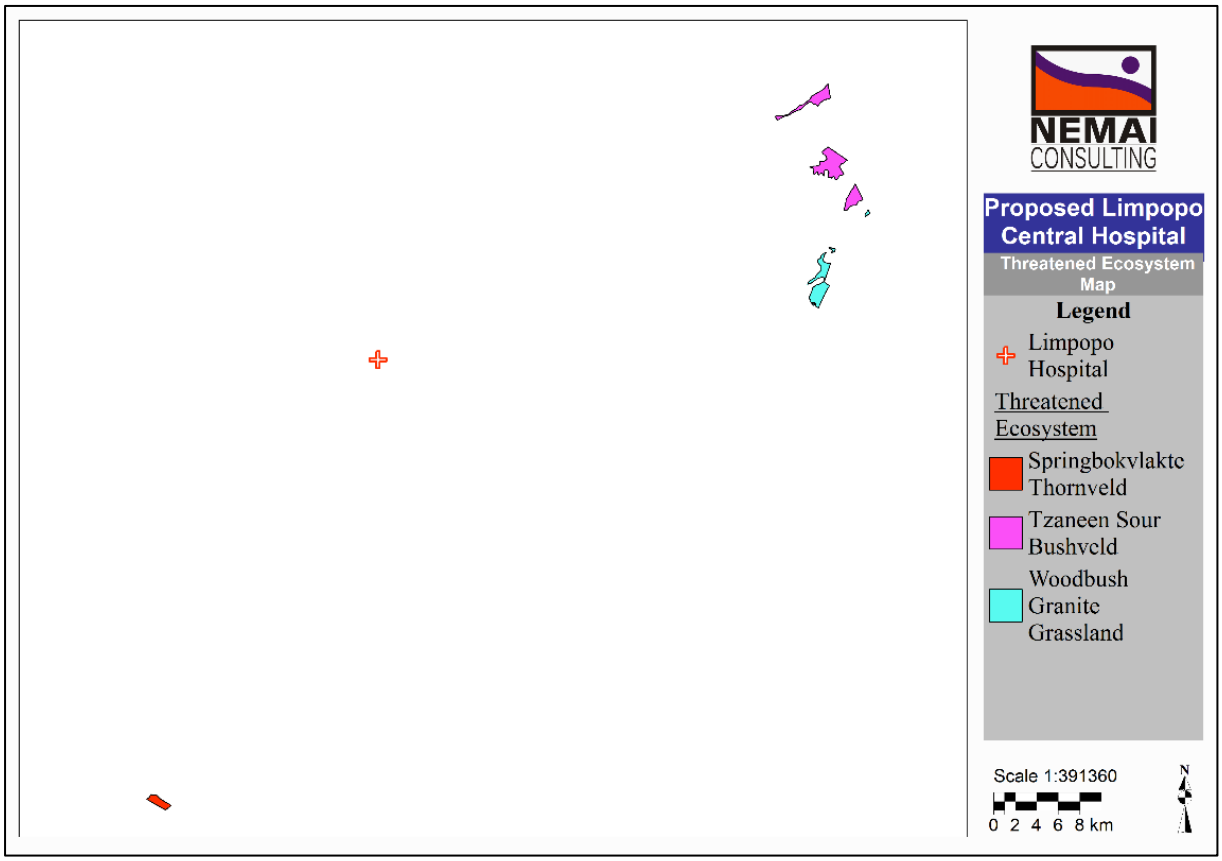


Figure 24: Threatened Ecosystems Map

12.9.1.3 Limpopo Conservation Plan

Critical Biodiversity Areas (CBAs) within the bioregion are the portfolio of sites that are required to meet the region's biodiversity targets, and need to be maintained in the appropriate condition for their category (Desmet et al, 2013). An objective of the CBA map is to identify a network of areas, which if managed according to the land use guidelines would meet the pattern targets for all important biodiversity features, while at the same time ensuring the areas necessary for supporting necessary ecological processes remain functional.

The systematic conservation planning process resulted in 40% of the Limpopo Province being identified as CBAs (CBA1 22% and CBA2 18%). Ecological Support Areas (ESAs) cover a further 22% of the province, of which 16% are intact natural areas (ESA 1) and 7% are degraded or areas with no natural remaining which are nevertheless required as they potentially retain some value for supporting ecological processes (ESA 2) (Desmet et al, 2013).

A map indicating the Limpopo Conservation Plan categories in relation to the project footprint is shown in **Figure 25**.

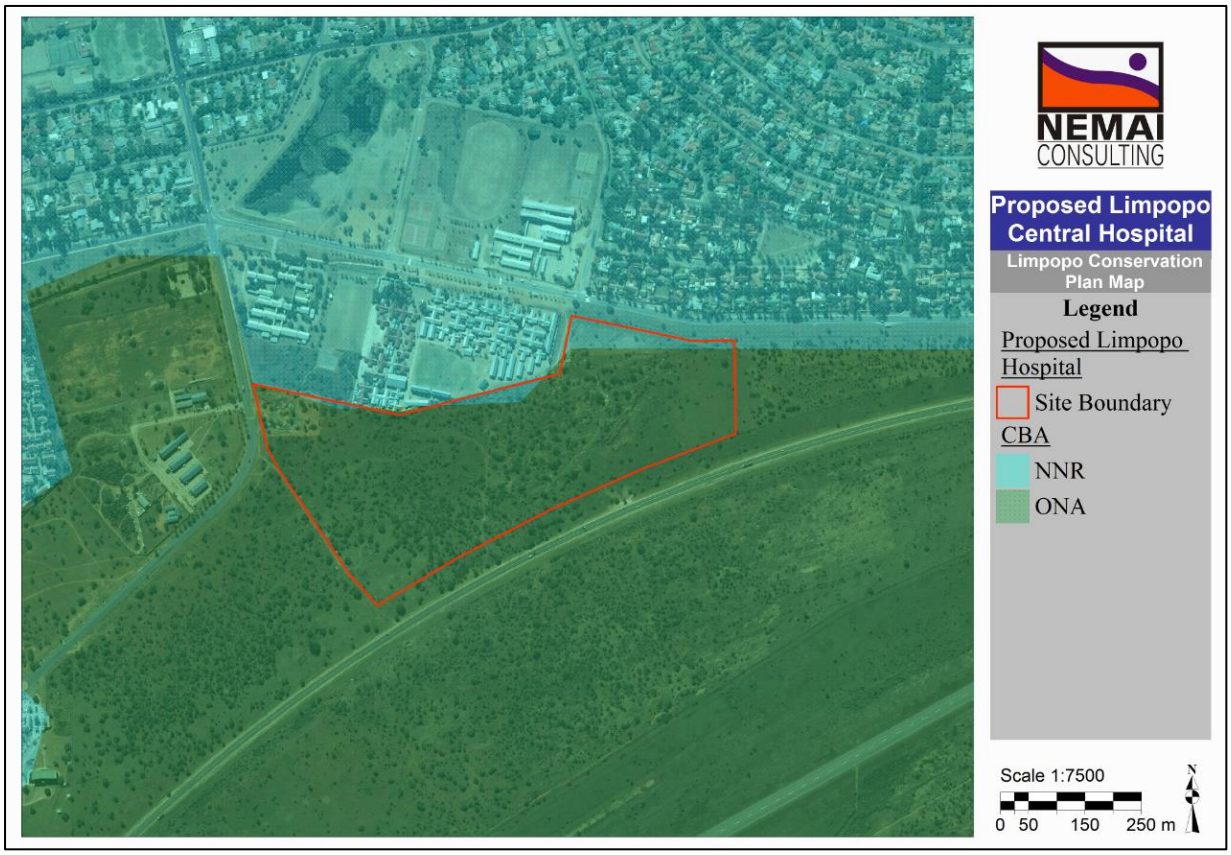


Figure 25: Limpopo Conservation Plan Map

The project footprint in relation to the Limpopo Conservation Plan is as follows:

- **ONA** – Other Natural Area: Majority of the proposed site falls within this category;
- **NNR** – No Natural Remaining: a small section on the northern side of the proposed site falls within this category.

The general description of CBA map categories, including ONA and NNR categories and associated land management objectives are listed in **Table 7**.

Table 7: General description of CBA map categories and associated land management objectives

CBA Map Category	Description	Land Management Objective	Land Management Recommendations	Compatible Land-Use	Incompatible Land-Use
Protected Areas	Formal Protected Areas and Protected Areas pending declaration under NEMPAA.	Maintain in a natural state with limited or no biodiversity loss. Rehabilitate degraded areas to a natural or near natural state, and manage for no further degradation. Development subject to Protected Area objectives and zoning in a NEMPAA compliant and approved management plan.	Maintain or obtain formal conservation protection.	Conservation and associated activities (e.g. ecotourism operations), and required support infrastructure.	All other land-uses.
Critical Biodiversity Areas (1)	Irreplaceable Sites. Areas required to meet biodiversity pattern and/or ecological processes targets. No alternative sites are available to meet targets.	Maintain in a natural state with limited or no biodiversity loss. Rehabilitate degraded areas to a natural or near natural state, and manage for no further degradation.	Obtain formal conservation protection where possible. Implement appropriate zoning to avoid net loss of intact habitat or intensification of land use.	Conservation and associated activities. Extensive game farming and eco--- tourism operations with strict control on environmental impacts and carrying capacities, where the overall there is a net biodiversity gain. Extensive Livestock Production with strict control on environmental impacts and carrying capacities. Required support infrastructure for the above activities. Urban Open Space Systems	Urban land-uses including Residential (including golf estates, rural residential, resorts), Business, Mining & Industrial; Infrastructure (roads, power lines, pipelines). Intensive Animal Production (all types including dairy farming associated with confinement, imported foodstuffs, and improved/irrigated pastures). Arable

CBA Map Category	Description	Land Management Objective	Land Management Recommendations	Compatible Land-Use	Incompatible Land-Use
					Agriculture (forestry, dry land & irrigated cropping). Small holdings
Critical Biodiversity Area (2)	Best Design Selected Sites. Areas selected to meet biodiversity pattern and/or ecological process targets. Alternative sites may be available to meet targets.	Maintain in a natural state with limited or no biodiversity loss. Maintain current agricultural activities. Ensure that land use is not intensified and that activities are managed to minimize impact on threatened species.	Avoid conversion of agricultural land to more intensive land uses, which may have a negative impact on threatened species or ecological processes.	Current agricultural practices including arable agriculture, intensive and extensive animal production, as well as game and ecotourism operations, so long as these are managed in a way to ensure populations of threatened species are maintained and the ecological processes which support them are not impacted. Any activities compatible with CBA1.	Urban land-uses including Residential (including golf estates, rural residential, resorts), Business, Mining & Industrial; Infrastructure (roads, power lines, pipelines). More intensive agricultural production than currently undertaken on site. Note: Certain elements of these activities could be allowed subject to detailed impact assessment to ensure that developments were designed to CBA2. Alternative areas may need to be identified to ensure the CBA network still meets the required targets.
Ecological Support Areas (1)	Natural, near natural and degraded areas supporting	Maintain ecosystem functionality and connectivity allowing	Implement appropriate zoning and land management	Conservation and associated activities. Extensive game farming and eco-tourism operations. Extensive Livestock Production.	Urban land-uses including Residential (including golf estates), Business, Mining &

CBA Map Category	Description	Land Management Objective	Land Management Recommendations	Compatible Land-Use	Incompatible Land-Use
	CBAs by maintaining ecological processes.	for limited loss of biodiversity pattern.	guidelines to avoid impacting ecological processes. Avoid intensification of land use. Avoid fragmentation of natural landscape.	Urban Open Space Systems. Low density rural residential, smallholdings or resorts where development design and overall development densities allow maintenance of ecological functioning.	Industrial; Infrastructure (roads, power lines, pipelines). Intensive Animal Production (all types including dairy farming associated with confinement, imported foodstuffs, and improved/irrigated pastures). Arable Agriculture (forestry, dry land & irrigated cropping). Note: Certain elements of these activities could be allowed subject to detailed impact assessment to ensure that developments were designed to maintain overall ecological functioning of ESAs.
Ecological Support Areas (2)	Areas with no natural habitat that is important for supporting ecological processes.	Avoid additional/ new impacts on ecological processes.	Maintain current land-use. Avoid intensification of land use, which may result in additional impact on ecological processes.	Existing activities (*e.g.* arable agriculture) should be maintained, but where possible a transition to less intensive land uses or ecological restoration should be favoured.	Any land use or activity that results in additional impacts on ecological functioning mostly associated with the intensification of land use in these areas (e.g. Change of floodplain from arable agriculture to an urban land use or

CBA Map Category	Description	Land Management Objective	Land Management Recommendations	Compatible Land-Use	Incompatible Land-Use
					from recreational fields and parks to urban).
Other Natural Areas (ONA)	Natural and intact but not required to meet targets, or identified as CBA or ESA	No management objectives, land management recommendations or land-use guidelines are prescribed. These areas are nevertheless subject to all applicable town and regional planning guidelines and policy. Where possible existing Not Natural areas should be favoured for development before "Other natural areas" as before "Other natural areas" may later be required either due to the identification of previously unknown important biodiversity features on these sites, or alternatively where the loss of CBA has resulted in the need to identify alternative sites.			
No natural habitat remaining (NNR)	Areas with no significant direct biodiversity value. Not Natural or degraded natural areas that are not required as ESA, including intensive agriculture, urban, industry; and human infrastructure.				

12.9.1.4 Protected Areas

The nearest protected area, with a formal status in terms of the National Environmental Management Protected Areas Act (Act No. 57 of 2003) in relation to the project footprint is the Kuschke Nature Reserve, approximately 11km south-west from the site (Refer to **Figure 26**).

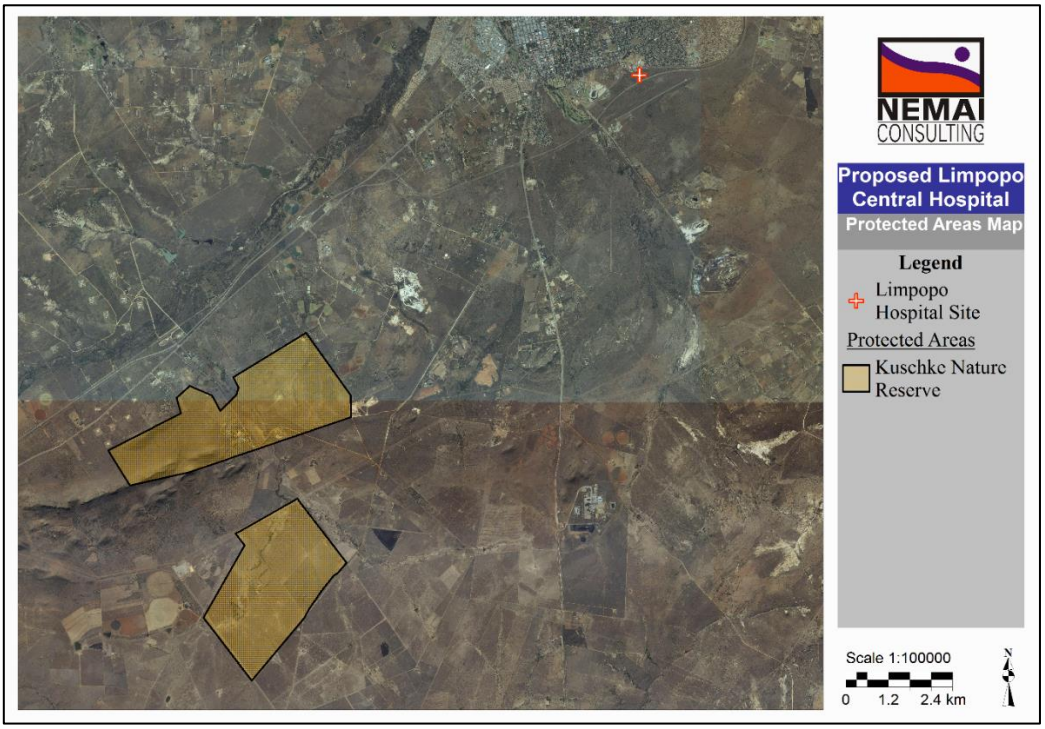


Figure 26: Protected Areas Map

12.9.1.5 Flora species

The proposed site is located within the 2329CD quarter degree square in terms of the 1:50 000 grid of South Africa. SANBI uses this grid system as a point of reference to determine any Red Data plant species or any species of conservation importance occurring in South Africa. This can be used to determine the list of species which could potentially occur within an area. **Table 8** indicates the plants that are known to occur on or around the project area recorded in 2329CD quarter degree square.

Table 8: Red Data plant species recorded in grid 2329 CD

Family	Species	Threat status	Growth forms
Amaryllidaceae	*Clivia caulescens* R.A.Dyer	NT	Geophyte
Apocynaceae	*Brachystelma minor* E.A.Bruce	VU	Geophyte
Celastraceae	*Elaeodendron transvaalense* (Burtt Davy) R.H.Archer	NT	Shrub, tree
Commelinaceae	*Commelina rogersii* Burtt Davy	VU	Herb
Euphorbiaceae	*Euphorbia groenewaldii* R.A.Dyer	CR	Dwarf shrub
Euphorbiaceae	*Euphorbia restricta* R.A.Dyer	Rare	Dwarf shrub
Hypoxidaceae	*Hypoxis hemerocallidea* Fisch., C.A.Mey. & Avé-Lall.	Declining	Geophyte

Family	Species	Threat status	Growth forms
Iridaceae	*Crocosmia masoniorum* (L.Bolus) N.E.Br.	VU	Geophyte
Ophioglossaceae	*Ophioglossum gracillimum* Welw. ex Hook. & Baker	EN	Geophyte

The definitions of the conservation status are provided in **Table 9** below.

Table 9: Definitions of Red Data Status

Symbol	Status	Description
CR	**Critically Endangered**	A taxon is **Critically Endangered** when the best available evidence indicates that it meets any of the five International Union for Conservation of Nature (IUCN) criteria for Endangered, and is therefore facing a very high risk of extinction in the wild.
EN	**Endangered**	A taxon is **Endangered** when the best available evidence indicates that it meets any of the five IUCN criteria for Endangered, and is therefore facing a very high risk of extinction in the wild
VU	**Vulnerable**	A taxon is **Vulnerable** when the best available evidence indicates that it meets any of the five IUCN criteria for Vulnerable and it is therefore considered to be facing a high risk of extinction in the wild.
NT	**Near Threatened**	A taxon is **Near Threatened** when available evidence indicates that it is close to meeting any of the five IUCN criteria for Vulnerable and it is therefore likely to qualify for a threatened category in the near future.
Declining		A taxon is **Declining** when it does not meet any of the five IUCN criteria and does not qualify for the categories Critically Endangered, Endangered, Vulnerable or Near Threatened, but there are threatening processes causing a continuing decline in the population.
Rare		A taxon is **Rare** when it meets any of the four South African criteria for rarity, but is not exposed to any direct or plausible potential threat and does not qualify for a category of threat according to the five IUCN.

12.9.2 Potential Impacts/Implications

Potential impacts during the construction phase include the following:

- Site clearing of indigenous vegetation;
- Soil contamination, vegetation loss and vegetation disturbance due to potential fuel and chemical spills; and
- Introduction of alien plant species;

12.9.3 Specialist Studies Required

The Terrestrial Ecological Impact Assessment in the EIA phase will assess the status of the sensitive ecological features. Areas to be affected by project activities and infrastructure will be surveyed to identify sensitive and significant floral species. Suitable mitigation measures will be identified and recommendations will be made to address potential impacts. Mitigation measures will be established during the EIA phase to manage the potential impacts to vegetation, removal of protected trees and medicinal plants, encroachment by exotic species and to address the overall reinstatement and rehabilitation of the area affected within the construction domain.

12.10 Fauna

12.10.1 Status Quo

12.10.1.1 Mammals

According to the Animal Demography Unit (http://vmus.adu.org.za/vm_sp_list.php) (ADU, 2018) the potential mammal species that could occur in the 2329CD grid, are presented in **Table 10**.

Table 10: Mammal species recorded in the grid cell 2329CD (ADU, 2019)

Family	Genus	Species	Subspecies	Red list category
Bovidae	*Aepyceros*	*melampus*		Least Concern
Bovidae	*Alcelaphus*	*caama*		Least Concern
Bovidae	*Connochaetes*	*taurinus*	*taurinus*	Least Concern
Bovidae	*Damaliscus*	*lunatus*		Least Concern (IUCN 2008)
Bovidae	*Hippotragus*	*niger*		Not listed
Bovidae	*Kobus*	*ellipsiprymnus*		Not listed
Bovidae	*Raphicerus*	*campestris*		Least Concern
Bovidae	*Redunca*	*arundinum*		Least Concern
Bovidae	*Redunca*	*fulvorufula*		Least Concern
Bovidae	*Sylvicapra*	*grimmia*		Least Concern
Bovidae	*Tragelaphus*	*angasii*		Least Concern
Bovidae	*Tragelaphus*	*oryx*		Least Concern
Bovidae	*Tragelaphus*	*scriptus*		Least Concern
Bovidae	*Tragelaphus*	*strepsiceros*		Least Concern
Canidae	*Canis*			Not listed
Canidae	*Canis*	*mesomelas*		Least Concern
Cercopithecidae	*Cercopithecus*	*pygerythrus*	*pygerythrus*	Least Concern
Chrysochloridae	*Neamblysomus*	*julianae*		Vulnerable
Equidae	*Equus*	*quagga*		Not listed
Giraffidae	*Giraffa*	*camelopardalis*	*camelopardalis*	Least Concern
Giraffidae	*Giraffa*	*camelopardalis*	*giraffa*	Least Concern
Herpestidae	*Atilax*	*paludinosus*		Least Concern
Herpestidae	*Herpestes*	*sanguineus*		Least Concern
Hyaenidae	*Hyaena*	*brunnea*		Near Threatened
Hystricidae	*Hystrix*	*africaeaustralis*		Least Concern
Pedetidae	*Pedetes*	*capensis*		Least Concern
Sciuridae	*Paraxerus*	*cepapi*		Least Concern
Suidae	*Phacochoerus*	*africanus*		Least Concern
Vespertilionidae	*Neoromicia*	*capensis*		Least Concern

12.10.1.2 Avifauna

Refer to **Figure 27** for Important Bird and Biodiversity Areas (IBA). The Polokwane Nature Reserve IBA is situated approximately 1km to south-west of the proposed site.

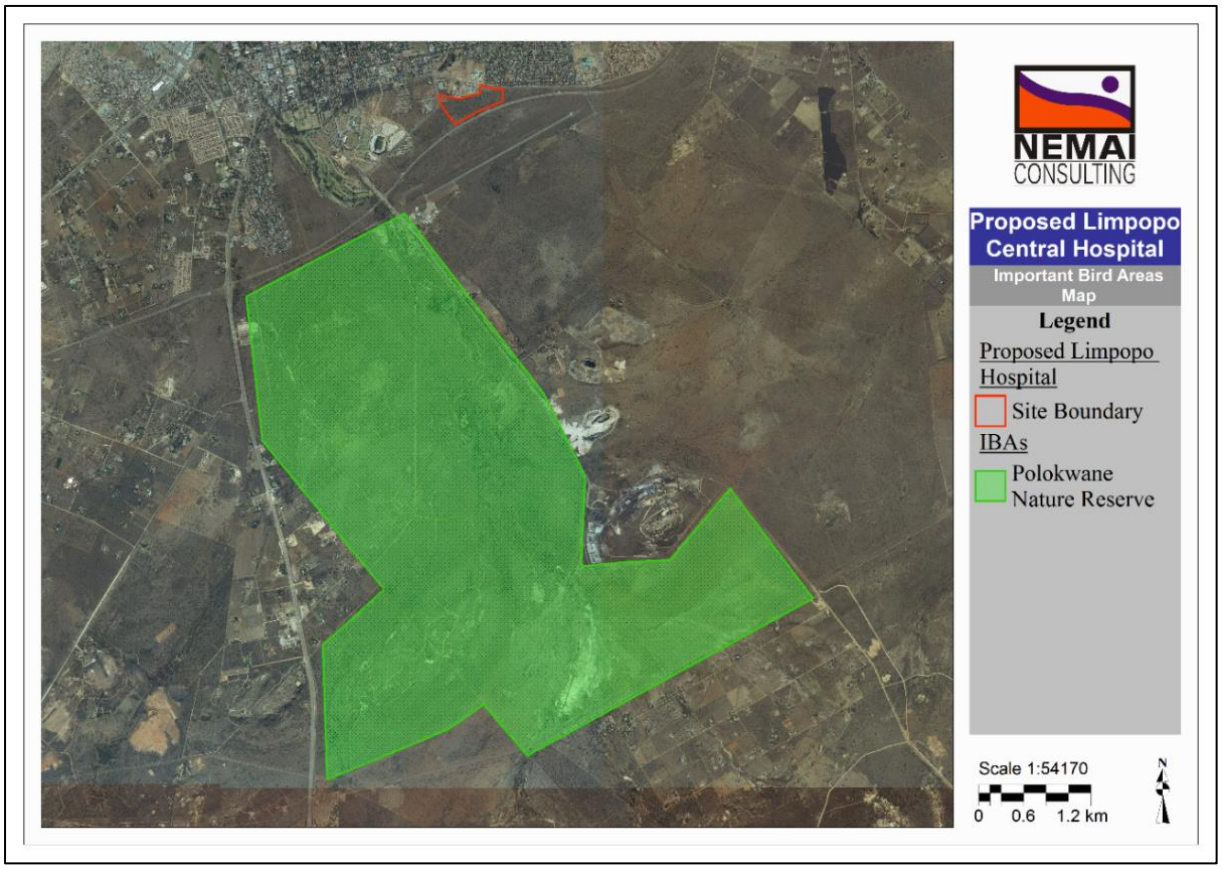


Figure 27: Important Bird Areas Map

According to the Southern African Bird Atlas Project 2 (SABAP 2), the red data bird species that could potentially occur in the quarter degree square 2329CD, is indicated in **Table 11** below.

Table 11: Red Data Listed bird species which could potentially occur on site (SABAP2)

Species Code	Common Name	Red list category
84	Black Stork	Near Threatened
88	Saddle-billed Stork	Endangered
90	Yellow-billed Stork	Near Threatened
92	Southern Bald ibis	Vulnerable
97	Lesser Flamingo	Near Threatened
118	Secretarybird	Near Threatened
122	Cape Vulture (Griffon)	Vulnerable
140	Martial Eagle	Vulnerable
172	Lanner Falcon	Near Threatened
183	Lesser Kestrel	Vulnerable
208	Blue Crane	Vulnerable
233	White-bellied Korhaan	Vulnerable
242	Greater Painted-snipe	Near Threatened
430	Half-collared Kingfisher	Near Threatened
501	Short-clawed Lark	Near Threatened

12.10.1.3 Reptiles

According to the data sourced from the South African Reptile Conservation Assessment (ADU, 2016) for the grid cell 2329CD, no species of conservation concerns are known to occur in the vicinity of the proposed development site.

12.10.1.4 Amphibians

According to the Frog Atlas of Southern African (http://vmus.adu.org.za/vm_sp_list.php), frog species that were recorded in the 2329CD grid are shown in **Table 12** below.

Table 12: Amphibian species recorded which could occur in the study area

Family	Genus	Species	Common Name	Red list category
Pyxicephalidae	*Pyxicephalus*	*adspersus*	Giant Bull Frog	Near Threatened

12.10.2 Potential Impacts/Implications

Threatened species could occur within the study area and the construction of the proposed development will have a negative impact on the habitats of such species. The flora and fauna specialist will be expected to establish whether these species are found on site and whether a search and rescue operation should be instituted prior to construction.

Potential impacts which could occur during the construction phase include:

- Ecosystem disruption may occur where clearing is undertaken to allow for the construction of the project infrastructure.
- Fauna could be adversely affected through construction-related activities (noise, dust, light pollution, and habitat loss).
- Poaching and wilful harming of animals by construction workers.
- Impacts to sensitive fauna species and their habitats to be assessed by relevant specialists and suitable mitigation measures to be identified, where possible.

12.10.3 Specialist Studies Required

A Terrestrial Ecological Assessment will be undertaken and the areas to be affected by project activities and infrastructure will be surveyed to identify sensitive and significant fauna species or occurrence of suitable habitat.

12.11 Socio-Economic Environment

12.11.1 Status Quo

Data pertaining to the socio-economic status quo of the Polokwane LM, based on the Census 2011 (Statistics South Africa, 2013), is presented below.

Population

The Polokwane LM currently has a population size of 628 999, with 178 001 households. 92.9% of the population fall within the Black African category (see **Table 13**).

Table 13: Population Group (Statistics South Africa, 2013)

Group	Percentage
Black African	92,9%
White	5,2%
Coloured	0,9%
Indian/Asian	0,7%
Other	0,2%

The female population is higher than the male population (see **Table 14**).

Table 14: Gender Distribution (Statistics South Africa, 2013)

Gender	Percentage
Female	52%
Male	48%

Languages

Most people in the Polokwane LM speak Sepedi as the first language at 80%, Afrikaans at 5%, English at 3% and the other languages make up for the other 11%. Refer to **Table 15**.

Table 15: Languages (Statistics South Africa, 2013)

Language	Percentage
Sepedi	78,7%
Afrikaans	5,3%
English	3,1%
Xitsonga	2,8%
Tshivenda	2,1%
Not Applicable	2,1%
IsiNdebele	0,9%
Sesotho	0,8%
Setswana	0,7%
IsiXhosa	0,2%
Sign Language	0,2%
SiSwati	0,2%
Other	1.9%
IsiZulu	1%

Education

Education levels are assessed in order to understand the potential grade or level of employment as well as livelihood of the community. Furthermore, it indicates the functional

literacy and skill level of a community. **Table 16** shows the highest level of education reached for both LMs falls within the "some primary" category.

Table 16: Highest Education Level (Statistics South Africa, 2013)

Group	Percentage
No Schooling	1,9%
Some Primary	38%
Completed Primary	5,8%
Some Secondary	33,7%
Completed Secondary	14%
Higher Education	3,6%
Not Applicable	3,1%

Majority of people within the Polokwane LM are either employed, or not economically active (see **Table 17**).

Table 17: Employment status (Statistics South Africa, 2013)

Employment Status	Number
Employed	155691
Unemployed	74784
Discouraged Work Seeker	14798
Not Economically Active	162442

Dwelling

Majority of the population reside in tribal/traditional areas (see **Table 18**).

Table 18: Settlement Type (Statistics South Africa, 2013)

Area	Percentage
Urban	41%
Tribal/Traditional	55,8%
Farm	3,2%

Annual Household Income

Majority of the annual household income ranges from R19,601 - R38,200 (see **Table 19**).

Table 19: Annual household income (Statistics South Africa, 2013)

Income	Percentage
None income	13,8%
R1 - R4,800	4,8%
R4,801 - R9,600	8,5%
R9,601 - R19,600	19,3%
R19,601 - R38,200	19,7%
R38,201 - R76,4000	11,7%
R76,401 - R153,800	8,1%
R153,801 - R307,600	7,2%

Income	Percentage
R307,601 - R614,400	4,6%
R614,001 - R1,228,800	1,6%
R1,228,801 - R2,457,600	0,4%
R2,457,601+	0,3%

Access to water

Majority of the residents have access to water from a regional/local water scheme, either operated by the municipality or from a water services provider. The second most dependent water source is from boreholes (see **Table 20**).

Table 20: Access to water (Statistics South Africa, 2013)

Source of water	Percentage
Regional/Local water scheme (operated by municipality or other water services provider)	82,7%
Borehole	9,7%
Spring	0,1%
Rain water tank	0,5%
Dam/Pool/Stagnant water	1,7%
River/Stream	0,6%
Water vendor	2,2%
Water tanker	1,1%
Other	1,4%

Most people make use of pit toilets without ventilation (see **Table 21**).

Table 21: Toilet Facilities (Statistics South Africa, 2013)

Toilet Facility	Percentage
None	2,8%
Flush toilet (connected to sewerage system)	41,1%
Flush toilet (with septic tank)	2,7%
Chemical toilet	0,4%
Pit toilet with ventilation	6,5%
Pit toilet without ventilation	45%
Bucket toilet	0,6%
Other	0,9%

Energy

Electricity is the primary from of energy used for cooking, heating and lighting purposes (see **Table 22**).

Table 22: Energy or fuel for cooking, heating and lighting (Statistics South Africa, 2013)

Energy Source	Cooking	Heating	Lighting
Electricity	70,9%	60,8%	83%
Gas	2,7%	1,4%	0,1%
Paraffin	11,3%	5%	1,6%
Solar	0,1%	0,1%	0,6%
Candles	0%	0%	14,4%
Wood	14,6%	18%	0%
Coal	0,1%	0,2%	0%
Animal Dung	0,2%	0,2%	0%
Other	0,1%	0%	0%
None	0,1%	14,1%	0,2%

Health Care

According to the Polokwane LM, there are currently over 50 health care facilities, where the main health care facilities in the municipality are listed below (**Table 23**):

Table 23: Health Care Facilities within Polokwane LM (https://www.polokwane.gov.za/City-Services/Pages/Health.aspx)

Type of Facility	Name of facility	Location in Municipality
Regional Hospitals	Polokwane Mankweng Hospital Complex	Polokwane
	Mankweng Hospital	Sovenga
	Mokopane Hospital	Mokopane
District Hospitals	Voortrekker Hospital	Mokopane
	Botlokwa Health Centre	Dwarsriver
	Lebowakgomo Hospital	Chuenespoort
	Seshego Hospital	Seshego
	W.F.Knobel Hospital	Lonsdale
	Zebediela Hospital	Gompies
Specialized/ Psychiatric Hospitals	Thabamoopo Hospital	Chueniespoort
Private Hospitals	Limpopo Medi-Clinic	Polokwane
Clinics	Buite Street Clinic	Polokwane
HIV/Aids Training, Information and Counselling Centres	HIV/Aids Centre	Polokwane
	Environmental Health Inspectorate	Polokwane

Refuse Disposal

Majority of people make use of their own refuse dumps for refuse disposal, followed by refuse removed by local authority/private company at least once a week (see **Table 24)**.

Table 24: Refuse disposal (Statistics South Africa, 2013)

Refuse Disposal	Percentage
Removed by local authority/private company at least once a week	44,4%
Removed by local authority/private company less often	0,7%
Communal refuse dump	1%
Own refuse dump	49,9%
No rubbish disposal	3,2%
Other	0,7%

Land Claims

The land claims in the district, based on the IDP (Capricorn IDP, 2016) are shown in **Figure 28**. Areas with land claims are situated predominantly south of the proposed site.

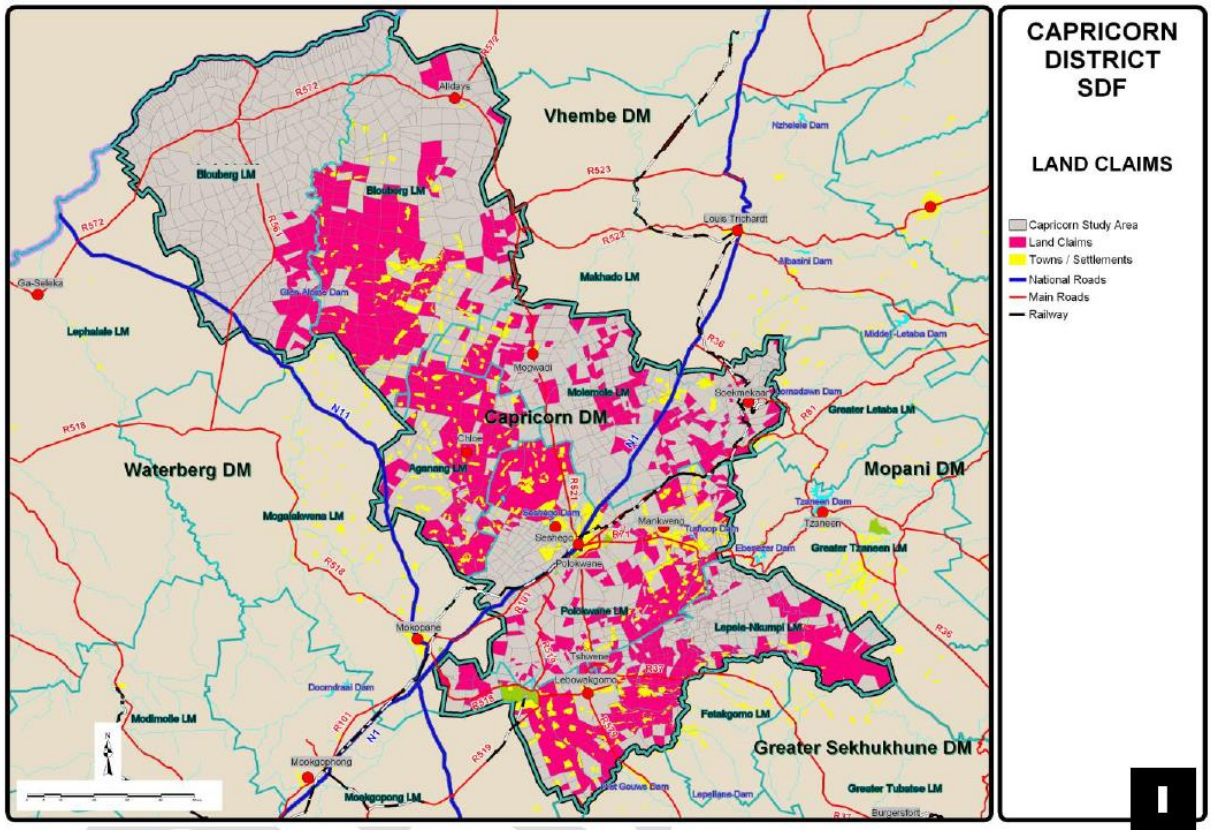


Figure 28: Land Claims (Capricorn IDP, 2016)

12.11.2 Potential Impacts/Implications

Possible negative impacts to the socio-economic environment include (amongst others):

- Loss of land;
- Potential damage to property;
- Safety and security;
- Traffic on local roads;
- Impact to visual quality and sense of place;
- Nuisance from dust and noise during construction;
- Light pollution; and
- Loss of agricultural production.

Possible positive impacts to the socio-economic environment include (amongst others):

- Improvement of health care provision in Polokwane LM;
- Employment opportunities created during the construction and operation phases of the project.
- Skills transfer; and
- Sourcing of goods and services from local SMMEs (where possible).

12.11.3 Specialist Studies Required

A Socio-economic Impact Assessment will be undertaken as part of the EIA phase, and mitigation measures will need to be identified to manage the impacts to the local social and economic environments.

12.12 Land Capability

12.12.1 Status Quo

The proposed site falls within areas classified as being moderate potential arable land (see **Figure 29**).

12.12.2 Potential Impacts/Implications

Potential impacts during the construction phase include:

- Clearance and permanent loss of moderate arable land.

12.12.3 Specialist Studies Required

- An Agricultural Impact Assessment will be conducted during the EIA phase. Amongst others, this will quantify the agricultural areas lost as a result of the proposed project and consider possible mitigation measures;
- EMPr to include measures for reinstatement and rehabilitation of bare areas on site.

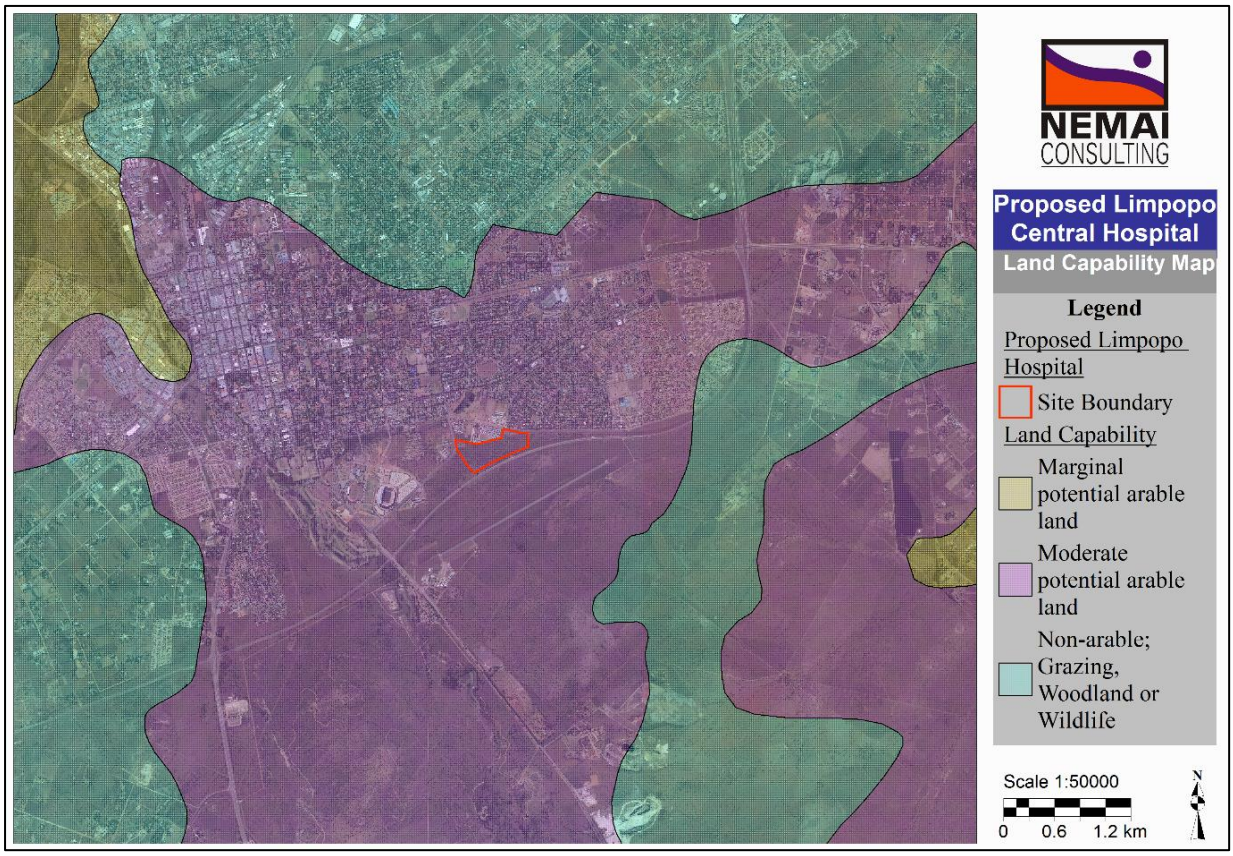


Figure 29: Land Capability Map

12.13 Air Quality

12.13.1 Status Quo

The proposed site is situated in an urban area, and thus the air pollution sources in the project region include the following:

- Municipal landfill (odours, methane, etc.)
- Vehicle tailpipe emissions;
- Vehicle entrainment of dust from paved roads;
- Industrial activities;
- Illegal dumping activities; and
- Veld fires.

12.13.2 Potential Impacts/Implications

- ❖ Dust will be generated during the construction period from various sources, including blasting, trenching, operations at the batching plant(s), aggregate stockpiles, use of access roads, and transportation of spoil material, soil stockpiles and general construction activities on site.
- ❖ Sensitive receptors to dust and other air quality impacts in the study area include existing schools and residential areas.

- There will be no incinerator on site, therefore air quality will not be directly impacted on site during the operational phase. All medical waste will be temporarily stored, and will then be collected and handled by a third party.

12.13.3 Specialist Studies Required

- No specialist study will be undertaken for air quality as it is not deemed necessary for the type of activities associated with this project. However mitigation measures will be included in the EMPr to ensure that the air quality impacts during the construction phase are suitably monitored (dust fallout and particulate matter) and managed and that regulated thresholds are not exceeded.
- The EMPr will also include measures to control and minimize greenhouse gas emissions by optimizing the utilisation of construction resources.

12.14 Noise

12.14.1 Status Quo

Due to the urban setting, the noise in the region emanates primarily from vehicle use of local and residential roads surrounding the site, and from surrounding schools and events held at the Peter Mokaba Stadium nearby the site.

12.14.2 Potential Impacts/Implications

- During construction, localised increases in noise will be caused by blasting (if required), excavations, dumping and loading of materials, movement of construction vehicles on road and off road, and general construction activities on site (i.e. use of machinery), where vibrations would be felt close to where the construction equipment is in use;
- During the operation of the hospital, noise will emanate from attending visitors and staff, as well as emergency vehicles arriving and departing from the site.

12.14.3 Specialist Studies Required

Noise that emanates from construction activities will be addressed through targeted best practices for noise management in the EMPr.

12.15 Historical and Cultural Features

12.15.1 Status Quo

12.15.1.1 Local Historical Features

The proposed site is situated on an open field, which has not been disturbed and therefore there is a possibility of heritage sources being situated on or near the site, such as Stone Age or Iron Age tools/objects, archaeological sites, graves or any other heritage and cultural artefacts.

12.15.1.2 Palaeontology

The Palaeontological (Fossil) Sensitivity Map (see **Figure 30**) was sourced from the South African Heritage Resources Information System (SAHRIS).

Table 25: Palaeontological Sensitivity Classification Table (SAHRIS)

Colour	Sensitivity	Required Action
RED	VERY HIGH	Field assessment and protocol for finds is required
ORANGE/YELLOW	HIGH	Desktop study is required and based on the outcome of the desktop study, a field assessment is likely
GREEN	MODERATE	Desktop study is required
BLUE	LOW	No palaeontological studies are required however a protocol for finds is required
GREY	INSIGNIFICANT/ZERO	No palaeontological studies are required
WHITE/CLEAR	UNKNOWN	These areas will require a minimum of a desktop study. As more information comes to light, SAHRA will continue to populate the map.

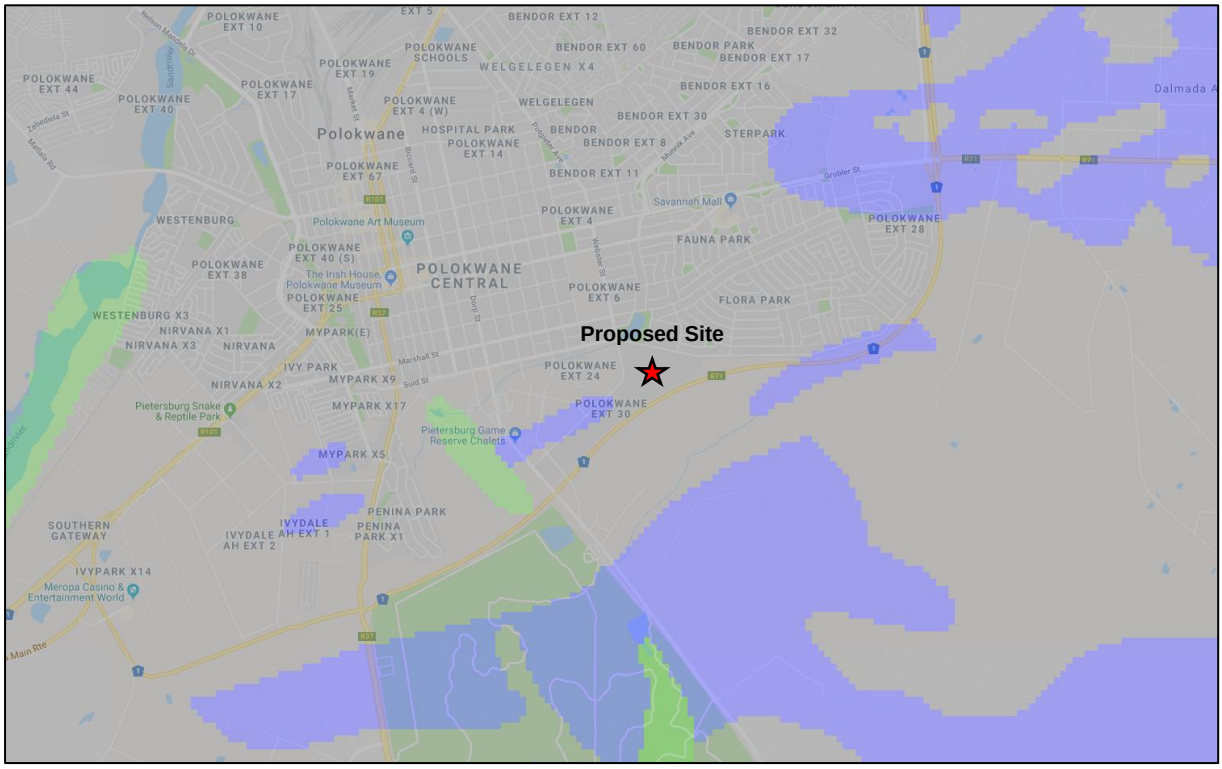


Figure 30: Palaeontological (Fossil) Sensitivity Map (SAHRIS)

Based on **Table 25** and the findings presented in **Figure 30**, the proposed site falls within areas classified as having insignificant/zero palaeontological sensitivity. Therefore no palaeontological studies are required.

12.15.2 Potential Impacts/Implications

- ❖ Heritage and cultural resources could be destroyed or damaged through construction activities.
- ❖ The chances of encountering heritage and cultural resources are reduced where the proposed footprint contains past disturbances (illegal dumping and occupying of the land)

12.15.3 Specialist Studies Required

- A Phase 1 Heritage Impact Assessment, in accordance with the National Heritage Resources Act (Act No. 25 of 1999), will be conducted during the EIA phase and will be submitted to LIHRA for review;
- All the relevant protocols must be abided by and permits will need to be obtained with regard to heritage resources (where necessary); and
- All work will cease for chance finds of heritage resources during the construction phase and LIHRA will be notified. Additional mitigation measures will be included in the EMPr.

12.16 Planning

12.16.1 Status Quo

12.16.1.1 General

According to the Capricorn IDP, the Capricorn DM (DC35) is situated in the centre of the Limpopo Province, sharing its borders with four district municipalities namely; Mopani (east), Sekhukhune (south), Vhembe (north) and Waterberg (west). The district is situated at the core of economic development in the Limpopo Province and includes the capital of the province, the City of Polokwane.

Polokwane Local Municipality is the local municipality located within CDM. It shares it name with the city of Polokwane and also a host to the city. Polokwane city is the capital and the major urban centre of the Limpopo Province. It is also referred to as the “Place of Safety”. Polokwane lies roughly halfway between Gauteng (300 km) and the Zimbabwean border (200 km) on the N1 highway, which connects Zimbabwe with the major cities of South Africa, such as Pretoria, Johannesburg, Bloemfontein and Cape Town.

The municipality has the highest population density of 167/km² and total population of 628 999. About 49.9% of the district population resides within Polokwane Municipal boundaries mainly because it is the economic hub of Limpopo. In terms of its physical composition, Polokwane Municipality is 23% urbanised and 71% rural. The municipality comprises of 38 wards and covers a total area of 3 766km². The proposed site falls within ward 20, and neighbours ward 22.

12.16.1.2 Limpopo SDF

The Limpopo SDF is dated September 2007. It is the highest order framework in the province and the District SDF must comply with the proposals contained in this SDF. The SDF indicates the following elements:

- Infrastructure;
- Nodes;
- Environmentally sensitive areas
- Corridors: Four corridors are identified as Strategic Development Initiatives. Two of these impact on the District: the Trans-Limpopo Corridor along the N1 and the east-west Corridor from Polokwane via Lephalale to Botswana.
- Health facilities
- Police stations

12.16.1.3 Capricorn SDF

The Capricorn District IDP (2016) indicates the following (see **Figure 31**):

- Towns and settlements;
- Mining areas;
- Nature reserves and conservation areas;
- Corridors (East West, Dilokeng, Phalaborwa, and Trans Corridors)
- Industrial, urban and rural nodes/growth points; and
- Tourism precincts.

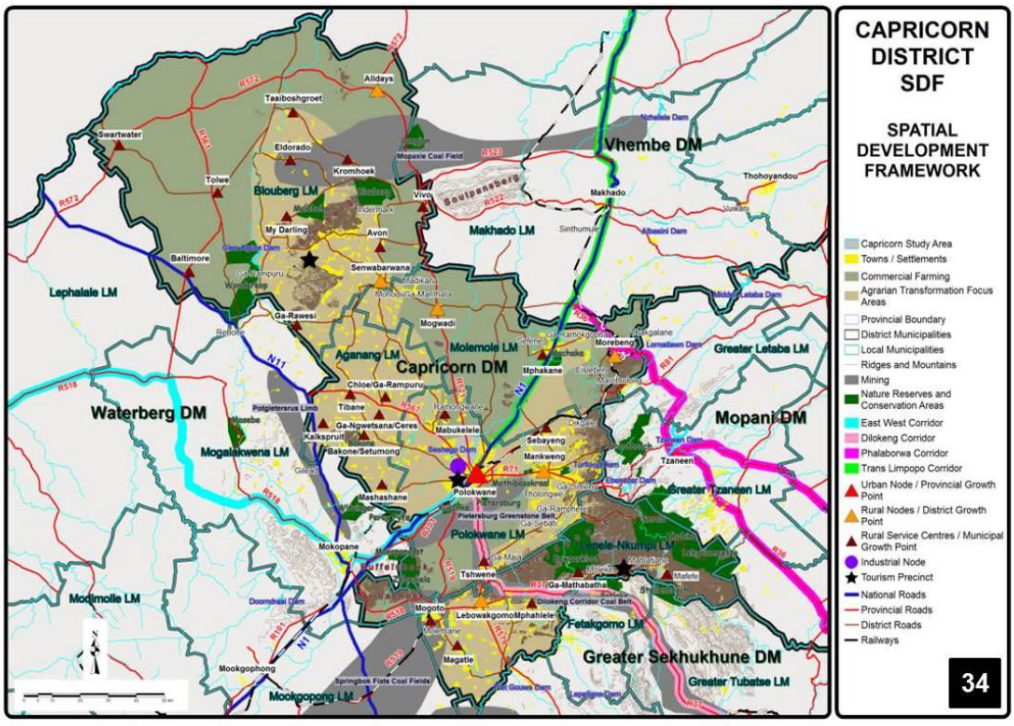


Figure 31: Capricorn DM SDF (Capricorn IDP, 2016)

The proposed site is situated in zones categorised as an urban node/provincial growth point.

12.16.1.4 Polokwane LM SDF

According to the Polokwane SDF, dated 2010 (amended in 2017) the proposed site is situated in areas categorised as a 'developable area' (**Figure 32**). The SDF indicates the following:

- Growth points;
- Towns and settlements;
- Nodes; and
- Business zones

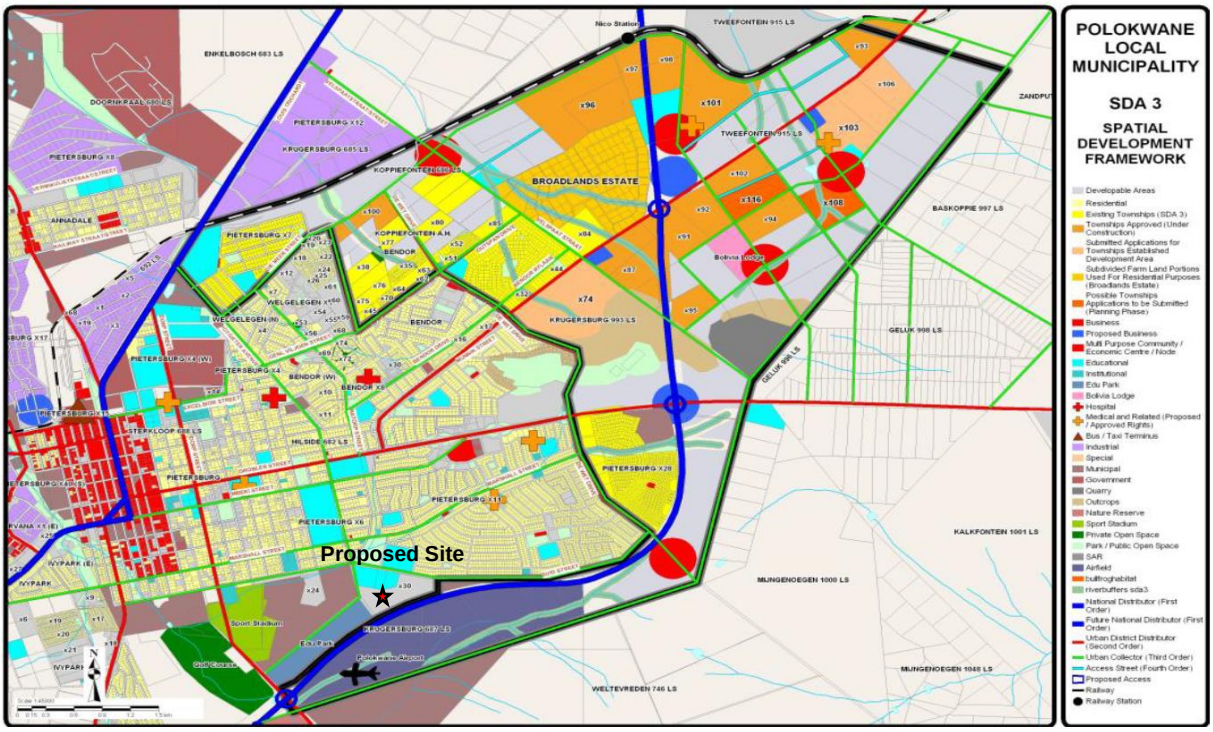


Figure 32: Polokwane LM SDF

12.16.2 Potential Impacts/Implications

The proposed Limpopo Central Hospital will allow for the improvement of tertiary health care provision in Polokwane, promoting local urban and economic development.

12.16.3 Specialist Studies Required

A socio-economic impact assessment will be conducted and included in the EIA phase. The influence of the proposed development to matters pertaining to planning and land use will receive further attention in the EIA phase.

12.17 Existing Structures and Infrastructure

12.17.1 Status Quo

The following physical features surrounding the site may be affected by the proposed development:

- Local and residential roads;
- Telephone lines;
- Power lines;
- Fencing erected on the neighbouring properties;
- Schools (Northern Academy Secondary School, New Horizon School and Edupark Campus). Refer to **Figure 33**.

Figure 33: Existing infrastructure surrounding proposed site

12.17.2 Potential Impacts/Implications

- Construction related disturbances (e.g. noise and dust);
- Disruptions to existing services (water, sewer, fibre etc.);
- Disruptions to traffic on local road network during construction and operation; and
- Damage to fencing and surrounding neighbouring schools buildings and infrastructure.

12.17.3 Specialist Studies Required

Mitigation measures to be identified during the EIA phase to safeguard any existing structures situated on site.

12.18 Transportation

12.18.1 Status Quo

The major transportation surrounding the site is provided in **Figure 34**.

The N1 (Polokwane Bypass) is situated south of the site, and residential roads: Webster Street to the west and Suid Street to the east of the site.

Figure 34: Major Transportation Network Map

12.18.2 Potential Impacts/Implications

During the construction period there will be a significant increase in traffic on the local road networks, due to the delivery of plant and material, transportation of staff and normal construction-related traffic. During the operational phase, there will be a large influx of people (staff and visitors) including vehicles, increasing the local traffic and use of residential roads surrounding the site.

12.18.3 Specialist Studies Required

A Traffic Impact Assessment was undertaken for the project and measures and recommendations from the aforementioned study, will be incorporated in the EIA Report. Suitable mitigation and management measures in terms of traffic and use of local roads will be included in the EMPr in order to minimise traffic impacts during the construction and operational phase.

12.19 Waste Disposal Facilities

12.19.1 Status Quo

According to the Capricorn DM (Capricorn IDP, 2018) and Polokwane LM Integrated Waste Management Plan (IWMP) (Polokwane IWMP, 2016), Polokwane LM has the permitted Weltevreden Landfill, which is operational, and the Mankweng dumping site, which is not

permitted and has to be closed and rehabilitated. According to the Polokwane LM (Polokwane IDP, 2018) the municipality also has 5 transfer stations (**Figure 35**).

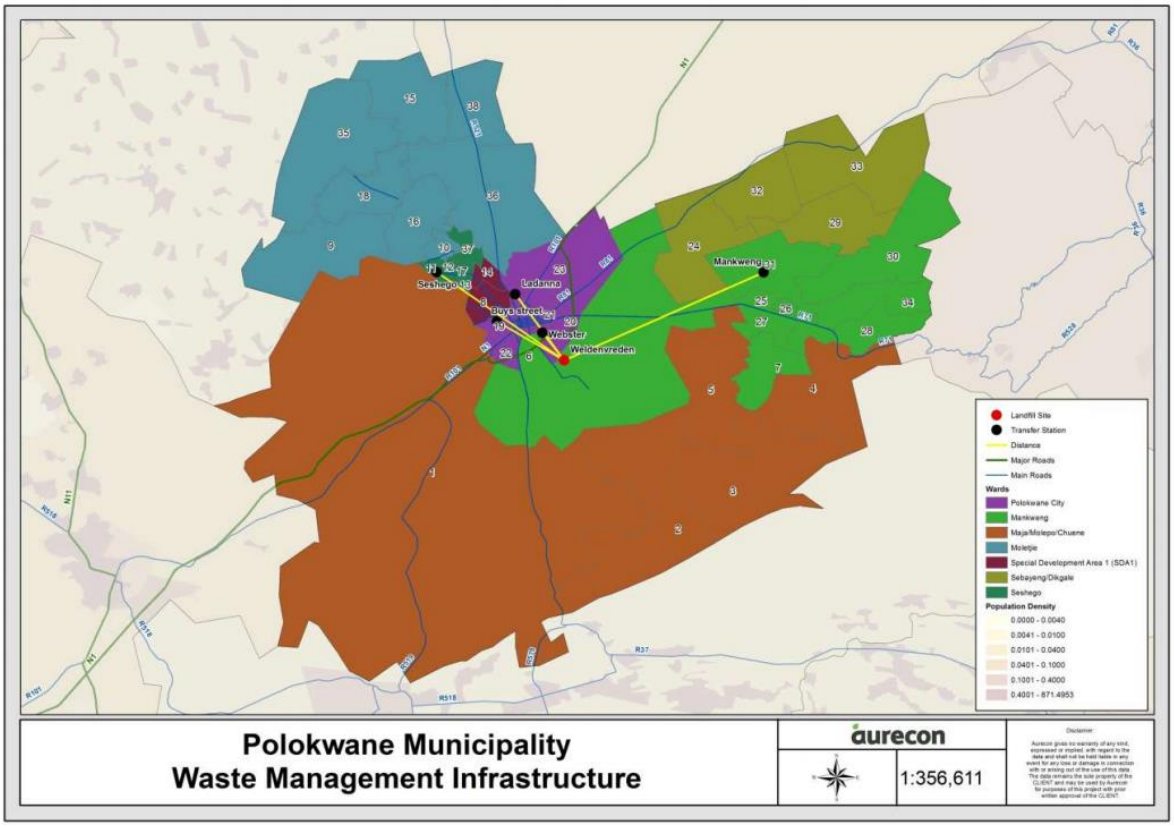


Figure 35: Waste Infrastructure (Polokwane IWMP, 2016)

12.19.2 Potential Impacts/Implications

The project will directly or incidentally generate various types of waste during the construction phase, such as:

- Waste generated from site preparations (e.g. plant material);
- Domestic waste;
- Surplus and used building material; and
- Hazardous waste (e.g. chemicals, oils, soil contaminated by spillages, diesel rags).
- Wastewater will be produced during construction from the sanitation facilities, washing of plant, operations at the batching plant, etc.
- Excess spoil material (soil and rock) will be generated as part of the bulk earthworks associated with the construction phase of the project.

12.19.3 Specialist Studies Required

- Measures provided in the Waste Management Plan, will be incorporated in the EMPr in order to manage waste during the construction and operational phases;
- During the operational phase, a waste area will be established, where waste from the hospital will be collected, sorted, weighed and placed in skips and recycling containers for

removal to service providers and appropriate registered landfill sites (hazardous and general sites, as required).

12.20 Aesthetic Qualities

12.20.1 Status Quo

The visual character of the landscape where the proposed site is planned, is open veld. However it is surrounded by urban development (schools, national/residential roads and power lines). The site has been degraded by past illegal dumping activities, as seen in **Figure 36**.

Figure 36: Illegal dumping activities on site (left) and general appearance of site (right)

12.20.2 Potential Impacts/Implications

- Potential visual impacts during the construction phase include:
  - Clearing of vegetation;
  - Construction related activities;
  - Light pollution;
  - Poor waste management and housekeeping on site;
  - Inadequate reinstatement and rehabilitation of footprint
- Potential visual impacts during the operational phase include:
  - High visibility of infrastructure;
  - Loss of 'sense of place'; and
  - Light pollution;

12.20.3 Specialist Studies Required

No visual impact assessment will be conducted as the proposed site is situated within an urban area and is surrounded by existing roads, schools and residential areas. The EMPr will further include measures to manage visual impacts and to rehabilitate areas affected by construction activities.

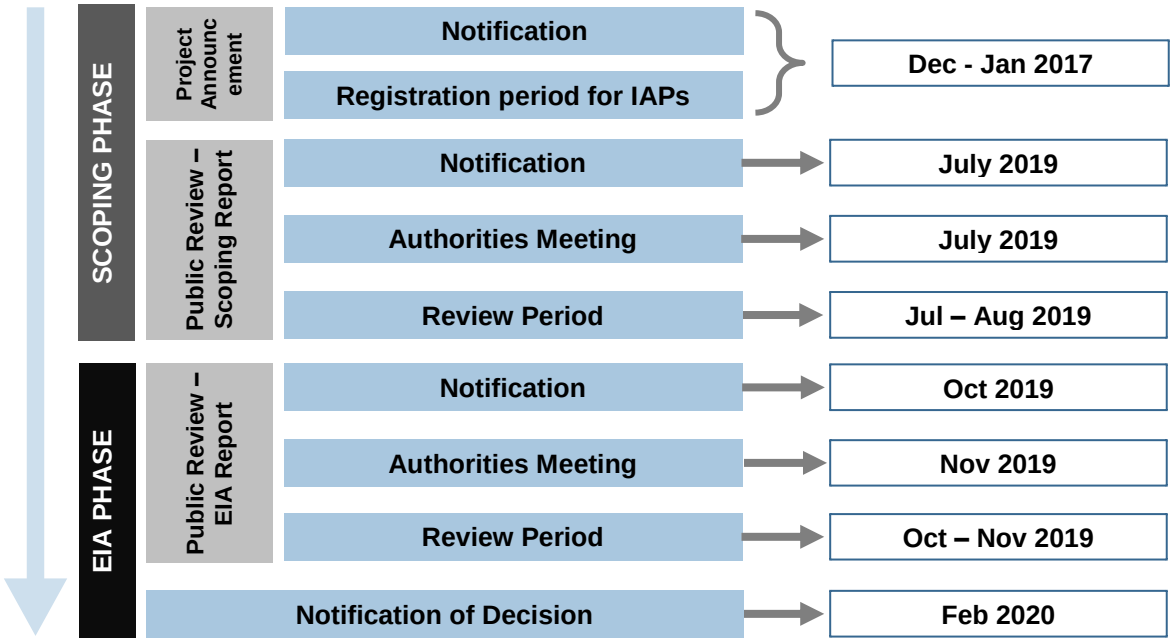
13 PUBLIC PARTICIPATION

13.1 General

The purpose of the public participation process for the proposed development includes:

- Providing IAPs with an opportunity to obtain information about the project;
- Allowing IAPs to express their views, issues and concerns with regard to the project;
- Granting IAPs an opportunity to recommend measures to avoid or reduce adverse impacts and enhance positive impacts associated with the project; and
- Enabling the project team to incorporate the needs, concerns and recommendations of IAPs into the project, where feasible.

The public participation process that was followed for the proposed Limpopo Central Hospital is governed by NEMA and GN No. R 982 of 4 December 2014 (as amended). **Figure 37** outlines the public participation process for the Scoping phase (current) and EIA phase (pending). Note that the dates may change due to the dynamic nature of the EIA process.



Note: *Dates may change during the course of the EIA*

Figure 37: Outline of Public Participation Process

13.2 Database of IAPs

A database of IAPs, which includes authorities, different spheres of government (national, provincial and local), parastatals, ward councillors, stakeholders, landowners, interest groups and members of the general public, was prepared for the project and is contained in **Appendix E1.** This database will be maintained and updated as necessary during the course of the EIA.

13.3 Project Announcement Phase

Nemai Consulting commenced with initial public notification in November 2016 in which the direct and adjacent landowners/occupiers, key regulatory authorities, stakeholders and the public were informed of the proposed Limpopo Central Hospital project. Proof of initial notification is provided in **Appendix E5**.

An outline of the notification process undertaken is detailed in the sections to follow:

13.3.1 Background Information Document

A Background Information Document (BID) which included a Reply Form, was distributed by email or hand delivered to IAPs listed in the IAP Database. The BID contained a brief background and description of the project, as well as the EIA Process, and listed the details for submitting comments regarding the proposed development. The BID served to notify landowners and IAPs of the project and the details on how to register as an IAP. Refer to **Appendix E2** for a copy of the BID.

13.3.2 Onsite Notices

Site notices were placed at strategic points surrounding the proposed site. The locations of the site notices are tabulated below:

Table 26: Locations of site notices

No.	Coordinates	Description
1	23°54'58.86"S 29°28'34.70"E	Intersection of Suid St and Webster St
2	23°55'42.07"S 29°28'0.49"E	Intersection of Silicon Rd and Webster St
3	23°55'9.47"S 29°27'38.00"E	Intersection of Suid St and Voortrekker St
4	23°55'15.17"S 29°27'8.78"E	Intersection of Suid St and Kirk St
5	23°55'3.63"S 29°29'15.76"E	Intersection of Acacia Ave and Suid St
6	23°55'51.91"S 29°28'10.20"E	Intersection of Silicon Rd and N1

Proof of on-site notification is provided in **Appendix E3**.

13.3.3 Newspaper Advertisements

English notices were placed in the classified sections of the following newspapers:

- The Polokwane Observer; and
- The Capricorn Voice.

These notices provided information on the proposed development and details on how to register as an IAP. Refer to **Appendix E4** for proof of the newspaper notices.

13.3.4 Comments received during the Announcement Phase

All reply forms and comments from registered IAPs to date, have been included in **Appendix E6**. All comments received were incorporated into a Comments and Responses Report (CRR). Refer to **Appendix H**. The CRR summarises the correspondence received by IAPs and Organs of State completed via the Reply Forms, Comments Sheets, letters, faxes and emails. This report will include a summary of the discussions from meetings. This report captures all the significant issues and queries raised, any statements that were made, and a record of all IAPs that registered. This report also attempts to address every comment through responses and input provided by the project team.

13.4 Review of Draft Scoping Report

13.4.1 Notification of Review of Draft Scoping Report

In accordance with Regulation 43(1) of GN No. R 982 of 4 December 2014 (as amended), registered IAPs are granted an opportunity to review and comment on the Draft Scoping Report. The following notifications were provided with regards to the review of the Draft Scoping Report:

- Landowners, authorities and registered IAPs were notified via email and SMS;
- Notices were placed in the following newspapers (copies of the newspaper advertisements to be contained in the Final Scoping Report) -
    - The Polokwane Observer (local); and
    - The Capricorn Voice (regional).
- Onsite notices were placed at the same points listed in **Table 25**.

13.4.2 Public Access to the Draft Scoping Report

The review period for the Draft Scoping Report took place from **12 July until 12 August 2019**. Copies of the document were placed at the locations provided in **Table 27**.

Table 27: Locations for the review of Draft Scoping Report

Copy	Location	Address	Tel. No.
1.	Edupark Campus	Reception Area, Administration Building, A Block, Webster St, Polokwane Ext 30, Polokwane, 0699	015 290 2800
2.	Polokwane City Library	Hans Van Rensburg St, Polokwane Central, Polokwane, 0700	015 290 2155

The Draft Scoping Report can also be downloaded from the following website - http://www.nemai.co.za/environmental.html.

13.4.3 Copies of the Draft Scoping Report

Copies of the Draft Scoping Report were provided to the following regulatory and commenting authorities:

- DEA;
- DEA Biodiversity;
- LEDET;
- DWS Limpopo Regional Office;
- DAFF;
- LIHRA;
- Limpopo Department of Public Works, Roads and Infrastructure; and
- Capricorn DM and Polokwane LM.

13.4.4 Public Meetings to Present the Draft Scoping Report

A public meeting has not been scheduled for the Scoping Phase, however should one be requested by an IAP, then the details of the meeting will be communicated to all registered IAPs during the review period.

13.4.5 Authorities Meeting to Present the Draft Scoping Report

Authorities are regarded as government departments with jurisdiction pertaining to the activities associated with the proposed project or the receiving environment. An authorities meeting will be held during the review period of the Draft Scoping Report. The purpose of the meeting will be:

- To introduce the project to the authorities;
- To provide an overview of the Draft Scoping Report; and
- To provide a platform for project-related discussions.

The minutes of the meeting will be included in **Appendix G** in the Final Scoping Report.

13.4.6 Comments received on the Draft Scoping Report

Comments received from authorities and IAPs during the review period for the Draft Scoping Report will be included in the Final Scoping Report. The Comments Sheet provided in **Appendix I** can be used for capturing comments.

14 POTENTIAL ENVIRONMENTAL IMPACTS OR ISSUES

In accordance with the purpose of the Scoping exercise as part of the overall environmental assessment, this section aims to identify potentially significant environmental issues for further consideration and prioritisation during the EIA stage. This allows for a more efficient and

focused impact assessment in the ensuing EIA Phase, where the analysis is largely limited to significant issues and reasonable alternatives.

14.1 Approach

14.1.1 Predicting Significant Environmental Issues

The potential environmental issues associated with the proposed project were identified during the Scoping phase through an appraisal of the following:

- Project-related components and associated infrastructure (see **Section 7.1**);
- Activities associated with the project life-cycle (see **Section 7.2**);
- Resources required for construction and operation (see **Section 7.3**);
- Nature and profile of the receiving environment and potential sensitive environmental features and attributes (see **Section 12**), which included a desktop evaluation (via literature review, specialist input, GIS, topographical maps and aerial photography) and site investigations;
- Understanding of direct and indirect effects of the project as a whole;
- Input received during public participation from authorities and IAPs; and
- Legal and policy context (see **Section 8**).

14.1.2 Mitigation of Impacts

During the EIA stage a detailed assessment will be conducted to evaluate all potential impacts (paying particular attention to the significant issues listed in the Scoping Report), with input from the project team, requisite specialist studies and IAPs and through the application of the impact assessment methodology contained in **Section 15**.

Suitable mitigation measures will be identified to manage the environmental impacts according to the following hierarchy:

1. Initial efforts will strive to **prevent** the occurrence of the impact;
2. If this is not possible, mitigation will include measures that reduce or **minimise** the significance of the impact to an acceptable level;
3. **Remediation** and **rehabilitation** will take place if measures cannot suitably prevent or reduce the impacts, or to address the residual impacts; and
4. As a last measure, **compensation** will be employed as a form of mitigating the impacts associated with a project.

The mitigation measures will be incorporated into the EMPr, which will form part of the EIA Report. This deliverable, together with the Environmental Authorisation, can act as a standalone document that can be used to *inter alia* monitor against compliance of the project with its pre-determined objectives, targets and management actions.

14.2 Summary of Potentially Significant Environmental Issues

Pertinent environmental issues, which will receive specific attention during the EIA phase through a detailed quantitative assessment and relevant specialist studies (where deemed necessary), are listed in the **Table 28**.

Table 28: Potentially significant environmental issues for prioritisation during the EIA phase

Environmental Feature	Potential Issues / Impacts during the Construction Phase	Potential Issues / Impacts during the Operational Phase	Specialist Study Required/ EIA Provisions
Land Use	• Permanent loss of land during site clearance	• Permanent loss of land	• Agricultural Impact Assessment; • Terrestrial Ecological Impact Assessment; • Socio-economic Impact Assessment; • Heritage Impact Assessment; and • EMPr
Climate	• Emissions of greenhouse gases during the construction phase.	• Emissions of greenhouse gases during the operational phase when emergency generators are in use.	• EMPr
Geology	• Blasting (if required).	-	• Geotechnical Study • EMPr
Geohydrology	• Potential disturbance of the aquifer from blasting. • Potential contamination of groundwater during the construction stage.	-	• Monitoring of groundwater levels during construction and operational • EMPr
Soil	• Soil erosion (e.g. steep terrain and poor management of stormwater); • Soil contamination through poor construction practices and inadequate management of dangerous goods (e.g. fuel).	• Soil erosion (e.g. steep terrain and poor management of stormwater).	• Agricultural Impact Assessment. • Geotechnical Study • EMPr
Surface Water	• Surface water pollution due to spillages and poor construction practices	•	• Aquatic Impact Assessment; • EMPr

Environmental Feature	Potential Issues / Impacts during the Construction Phase	Potential Issues / Impacts during the Operational Phase	Specialist Study Required/ EIA Provisions
Terrestrial Ecology	• Impacts to sensitive terrestrial ecological features; • Potential loss of significant flora and fauna species; • Damage / clearance of habitat of conservation importance in construction domain; • Proliferation of exotic vegetation	•	• Terrestrial Ecological Impact Assessment; • Search and Rescue Relocation Plan (if required) • EMPr
Heritage	• Possible disturbance and destruction of heritage resources;	-	• Phase 1 Heritage Impact Assessment; • EMPr
Air Quality	• Excessive dust levels	-	• EMPr
Noise	• Localised increase in noise levels during construction; • Noise from blasting activities (if required)	• Localised increase in noise from use of generators	• EMPr
Waste	• Waste generated from site preparations (e.g. plant material). • Domestic waste. • Surplus and used building material. • Hazardous waste (e.g. chemicals, oils, soil contaminated by spillages, diesel rags). • Wastewater (sanitation facilities, washing of plant, operations at the batching plant, etc.).	-	• Waste Management Plan; • EMPr.
Traffic	• Increase in traffic on the local road networks during construction phase. • Risks to road users.	• Increase in traffic on the local road networks during operation of LCH.	• Traffic Impact Assessment; • EMPr
Aesthetics	• Visual quality and sense of place to be adversely affected by construction activities (mainly Edupark, Northern Academy Secondary School, and residential properties adjacent to construction domain	• High visibility of permanent infrastructure; • Loss of “sense of place” to neighbouring properties; • Provision of light at infrastructure may cause light pollution;	• Socio-Economic Impact Assessment; • EMPr

Environmental Feature	Potential Issues / Impacts during the Construction Phase	Potential Issues / Impacts during the Operational Phase	Specialist Study Required/ EIA Provisions
		• Inadequate reinstatement and rehabilitation of construction footprint.	
Socio-Economic Environment	• Loss of land within construction domain; • Nuisance from dust and noise; • Influx of people seeking employment and associated impacts (e.g. foreign workforce, cultural conflicts, squatting, demographic changes, anti-social behaviour, and incidence of HIV/AIDS) • Safety and security; • Use of local road network; • Increase in employment opportunities; • Skills development and transfer; • Impacts on local SMME's	• Improved access and provision of public healthcare; • Increase in employment; • Skills development.	• Socio-Economic Impact Assessment; • EMPr

14.3 Cumulative Impacts

A cumulative impact, in relation to an activity, means the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities. Cumulative impacts can be identified by combining the potential environmental implications of the proposed Limpopo Central Hospital with the impacts of projects and activities that have occurred in the past, are currently occurring, or are proposed in the future within the project area.

The following potential cumulative impacts will be considered as part of the EIA:

- The construction period may cause traffic-related impacts in terms of the local road network, which will be associated with heavy vehicle construction traffic for the delivery of material and the transportation of construction workers. This may compound traffic impacts if other large scale projects are planned during the same period. During the operational phase of the hospital, there will be an influx of people, which means there will be an increase in the number of road users along the existing local roads surrounding the site.

- The Terrestrial Ecological Impact Assessment will need to identify species of conservation significance that could be adversely affected by the project activities. This study will need to consider the existing local impacts to the biodiversity and the incremental loss of conservation-worthy species, within the context of the provincial conservation goals and targets; and
- Land clearing activities and other construction-related disturbances could lead to the cumulative loss of bushveld vegetation as well as the proliferation of exotic vegetation.
- There will be an increase in the dust and noise levels during the construction phase, as a result of earthworks and site clearance, which will impact the neighbouring properties.
- The hospital will require bulk services (i.e. water and sanitation, power supply) which will tap into existing service networks, which places additional stress on the existing services in the area; and
- The operation of the proposed Limpopo Central Hospital will provide a positive contribution not only to Polokwane and the Limpopo Province, but to the country. The hospital will stimulate the economy both on a macro and micro level. Benefits will be in the form of employment opportunities, especially locally; the provision of goods and services; improvement of the skills of the students passing through the Medical School who, by virtue of their increased earning power, improved economic activity; improving the number of health professionals in the region thereby improving the health of the people in that region which, in turn, due to its focus on preventive practice, reduces the burden of disease and the associated drain on the fiscus. This should particularly affect the maternity and neonatal mortality rates which in itself will increase longevity and the added benefits to the economy.

15 METHODOLOGY TO ASSESS THE IDENTIFIED IMPACTS

Information provided by specialists will be used to calculate an overall impact score by multiplying the product of the nature, magnitude and the significance of the impact by the sum of the extent, duration and probability based on the following equation:

Nature (/Status)

The project could have a positive, negative or neutral impact on the environment.

Extent

- Local - extend to the site and its immediate surroundings.
- Regional - impact on the region but within the province.
- National - impact on an interprovincial scale.
- International - impact outside of South Africa.

Magnitude

Degree to which impact may cause irreplaceable loss of resources.

- Low - natural and social functions and processes are not affected or minimally affected.
- Medium - affected environment is notably altered; natural and social functions and processes continue albeit in a modified way.
- High - natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease.

Duration

- Short term - 0-5 years.
- Medium term - 5-11 years.
- Long term - impact ceases after the operational life cycle of the activity either because of natural processes or by human intervention.
- Permanent - mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient.

Probability

- Almost certain - the event is expected to occur in most circumstances.
- Likely - the event will probably occur in most circumstances.
- Moderate - the event should occur at some time.
- Unlikely - the event could occur at some time.
- Rare/Remote - the event may occur only in exceptional circumstances.

Significance

Provides an overall impression of an impact's importance, and the degree to which it can be mitigated. The range for significance ratings is as follows-

0 – Impact will not affect the environment. No mitigation necessary.

1 – No impact after mitigation.

2 – Residual impact after mitigation.

3 – Impact cannot be mitigated.

16 PLAN OF STUDY FOR EIA

This Plan of Study, which explains the approach to be adopted in the EIA Phase for the proposed Limpopo Central Hospital, was prepared in accordance with 2(1)(h) of Appendix 2 of GN No. R. 982 of the 2014 EIA Regulations, as amended.

16.1 Key Environmental Issues Identified During Scoping Phase

The Scoping exercise aimed to identify and qualitatively predict potentially significant environmental issues for further consideration and prioritisation. During the EIA stage a detailed quantitative impact assessment will be conducted via contributions from the project team and requisite specialist studies, and through the application of the impact assessment methodology contained in **Section 15**. Suitable mitigation measures will be identified to manage (i.e. prevent, reduce, rehabilitate and/or compensate) the environmental impacts, and will be incorporated into an EMPr.

Pertinent environmental issues identified during Scoping, which will receive specific attention during the EIA phase are listed in **Table 28** (construction and operational phases).

16.2 Feasible Alternatives to be assessed during EIA Phase

The EIA phase will include a detailed comparative analysis of the project's feasible alternatives that emanate from the Scoping exercise, which will include environmental (with specialist input) and technical evaluations. This will ultimately result in the selection of a BPEO. The feasible alternatives to be assessed in the EIA phase include the two proposed layouts.

16.3 Specialist Studies

According to Münster (2005), a **trigger** is:

"A particular characteristic of either the receiving environment or the proposed project which indicates that there is likely to be an issue and/or potentially significant impact associated with that proposed development that may require specialist input".

Further, the 2014 EIA Regulations (as amended) define a **specialist** as:

"A person that is generally recognised within the scientific community as having the capability of undertaking, in conformance with generally recognised scientific principles, specialist studies or preparing specialist reports, including due diligence studies and socio-economic studies."

The requisite specialist studies 'triggered' by the findings of the Scoping process, aimed at addressing the key issues and compliance with legal obligations, include:

1. Terrestrial Ecological Impact Assessment;
2. Agricultural Impact Assessment;
3. Aquatic and Wetland Impact Assessment;
4. Heritage Impact Assessment; and
5. Socio-Economic Impact Assessment.

In addition, the findings from the following studies will also be considered and included in the EIA Report (as relevant):

- Geohydrological Investigations;
- Geotechnical Site Investigations;
- Landscape Design Report;
- Civil Engineering Report;
- Electrical Design Report; and
- Traffic Impact Assessment.

The Terms of Reference (ToR), both general and specific, for the abovementioned specialist studies follow in the sub-sections below. Amongst others, the *Guideline for determining the scope of specialist involvement in EIA processes* (Münster, 2005) was used in compiling the general Terms of Reference for the specialist studies. The following guidelines were also employed to prepare the specific ToR for the respective specialists (where appropriate):

- Guideline for involving biodiversity specialists in EIA processes (Brownlie, 2005);
- Guideline for involving heritage specialists in EIA processes (Winter & Baumann, 2005); and
- Guideline for involving social assessment specialists in EIA processes (Barbour, 2007).

In addition to the above guidelines, the relevant specialists need to satisfy specific requirements stipulated by the following key environmental authorities:

- DEA;
- LDEDET;
- DWS;
- DAFF; and
- LIHRA

For the inclusion of the findings of the specialist studies into the EIA report, the following guideline will be used: *Guideline for the review of specialist input in EIA processes* (Keatimilwe & Ashton, 2005). Key considerations will include:

- Ensuring that the specialists have adequately addressed IAPs' issues and specific requirements prescribed by environmental authorities;
- Ensuring that the specialists' input is relevant, appropriate and unambiguous; and

- Verifying that information regarding the receiving ecological, social and economic environment has been accurately reflected and considered.

16.3.1 Terms of Reference – General

The following general ToR apply to all the EIA specialist studies to be undertaken for the proposed project:

1. Address all triggers for the specialist studies contained in the subsequent specific ToR;
2. Address issues raised by IAPs, as contained in the Comments and Response Report, and conduct an assessment of all potentially significant impacts. Additional issues that have not been identified during Scoping should also be highlighted to the EAP for further investigations;
3. Ensure that the requirements of the environmental authorities that have specific jurisdiction over the various disciplines and environmental features are satisfied;
4. Approach to include desktop study and site visits, as deemed necessary, to understand the affected environment and to adequately investigate and evaluate salient issues. Indigenous knowledge (i.e. targeted consultation) should also be regarded as a potential information resource;
5. Assess the impacts (direct, indirect and cumulative) in terms of their significance (using suitable evaluation criteria) and suggest suitable mitigation measures. In accordance with the mitigation hierarchy, negative impacts should be avoided, minimised, rehabilitated (or reinstated) or compensated for (i.e. offsets), whereas positive impacts should be enhanced. A risk-averse and cautious approach should be adopted under conditions of uncertainty;
6. Consider time boundaries, including short to long-term implications of impacts for project life-cycle (i.e. pre-construction, construction, operation and decommissioning);
7. Consider spatial boundaries, including:
    a. Broad context of the proposed project (i.e. beyond the boundaries of the specific site);
    b. Off-site impacts; and
    c. Local, regional, national or global context.
8. The provision of a statement of impact significance for each issue, which specifies whether or not a pre-determined threshold of significance (i.e. changes in effects to the environment which would change a significance rating) has been exceeded, and whether or not the impact presents a potential fatal flaw or not. This statement of significance should be provided for anticipated project impacts both before and after application of impact management actions;

9. Recommend a monitoring programme to implement mitigation measures and measure performance. List indicators to be used during monitoring;
10. Appraisal of alternatives (including the No-Go option) by identifying the BPEO with suitable justification;
11. Advise on the need for additional specialists to investigate specific components and the scope and extent of the information required from such studies;
12. Engage with other specialists whose studies may have bearing on your specific investigation;
13. Present findings and participate at public meetings, as necessary.
14. Information provided to the EAP needs to be signed off and a Specialist Declaration of Independence will need to be signed;
15. The appointed specialists must take into account the policy framework and legislation relevant to their particular studies; and
16. All specialist reports must adhere to Appendix 6 of GN No. R 982 of 4 December 2014 (as amended).

16.3.2 Terms of Reference – Specific

16.3.2.1 Aquatic and Wetland Impact Assessment

Summary of Key Issues & Triggers Identified During Scoping:

- Impacts to watercourse situated on site; and
- Loss of riparian and instream vegetation within construction domain.

Approach:

- Asses and delineate watercourses (riparian habitats and wetlands within a 500 m radius of project footprint) at varying levels of detail and rigour, based on the risks posed to the affected watercourses;
- Conduct a comprehensive desktop assessment for the local systems;
- Determine the baseline ecological status of the local watercourses and wetland systems where applicable;
- Conduct a risk assessment for the receiving systems in light of the proposed project. Where applicable provide suggestions to avoid impacts, and where impacts are unavoidable prescribe measures to mitigate these impacts; and
- Provide recommendations and a monitoring programme for the project.

Nominated Specialist:

Organisation:	The Biodiversity Company
Name:	Andrew Husted

Qualifications:	MSc – Aquatic Health
Affiliation (if applicable):	• Professional Natural Scientist-Ecological Science (Reg number: 400213/11) with South African Council for Natural Scientific Professions (SACNASP)

16.3.2.2 Terrestrial Ecological Impact Assessment

Summary of Key Issues & Triggers Identified During Scoping:

- Potential loss of significant flora and fauna species;
- Impacts to sensitive terrestrial ecological features; and
- Management actions for controlling exotic vegetation.

Approach:

- Undertake baseline survey and describe affected environment within the project footprint from a biodiversity perspective;
- Take into consideration the provincial conservation goals and targets;
- Assess the current ecological status and the conservation priority within the project footprint and adjacent area (as deemed necessary). Provide a concise description of the importance of the affected area to biodiversity in terms of pattern and process, ecosystem goods and services, as appropriate;
- A complete potential biodiversity list must be provided;
- The conservation status of each species listed must be determined;
- Undertake sensitivity study to identify protected and conservation-worthy species. Prepare a terrestrial ecological sensitivity map with the use of GIS, based on the findings of the study;
- Recommend any conservation buffer zones;
- Assess impacts to fauna and flora, associated with the project. Consider cause-effect-impact pathways for assessing impacts to biodiversity related to the project;
- Identify potential fatal flaws associated with the project and its alternatives from a biodiversity perspective;
- Comply with specific requirements and guidelines of DEA and LEDET; and
- Consider the Limpopo Environmental Management Act (Act No. 7 of 2003), Limpopo Biodiversity Conservation Plan (2013) and other relevant policies, strategies, plans and programmes.

Nominated Specialist:

Organisation:	Nemai Consulting
Name:	Avhafarei Phamphe
Qualifications:	MSc – Botany

Affiliation (if applicable):	• Professional Natural Scientist-Ecological Science (Reg number: 400349/12) with South African Council for Natural Scientific Professions (SACNASP) • Professional member of South African Institute of Ecologists and Environmental Scientists (SAIEES) • Professional member of South African Association of Botanists (SAAB)

16.3.2.3 Heritage Impact Assessment

Summary of Key Issues & Triggers Identified During Scoping:

- Potential occurrence of heritage resources, graves and structures older than 60 years within project footprint.

Approach:

- Undertake a Heritage Impact Assessment in accordance with the National Heritage Resources Act (Act No. 25 of 1999).
- The identification and mapping of all heritage resources in the area affected, as defined in Section 2 of the National Heritage Resources Act (Act No. 25 of 1999), including archaeological and palaeontological sites on or close (within 100 m) of the proposed developments.
- Undertake a desktop palaeontological assessment (evaluate site in terms of SAHRIS).
- The assessment of the significance of such resources in terms of the heritage assessment criteria as set out in the regulations.
- An assessment of the impact of development on such heritage resources.
- An evaluation of the impacts of the development on heritage resources.
- Prepare a heritage sensitivity map (GIS-based), based on the findings of the study.
- Identify heritage resources to be monitored.
- Comply with specific requirements and guidelines of LIHRA and SAHRA.

Nominated Specialist:

Organisation:	PGS Heritage
Name:	Wouter Fourie
Qualifications:	BA (Hons) Archaeology and Geography
Affiliation (if applicable):	• Professional Archaeologist - Association of Southern African Professional Archaeologists (ASAPA) - Professional Member • Accredited Professional Heritage Specialist – Association of Professional Heritage Practitioners (APHP)

16.3.2.4 Agricultural Impact Assessment

Summary of Key Issues & Triggers Identified During Scoping:

- Loss of fertile soil, cultivated areas and agricultural land in project footprint;

Approach:

- Address potential issues which may include:
    - Loss of agricultural land.
    - Loss of fertile soil, cultivated areas and grazing land.
- Determine agricultural potential in project footprint;
- Determine impacts of project from an agricultural perspective; and
- Suggest suitable mitigation measures to address the identified impacts.

Nominated Specialist:

Organisation:	Terra Soil Science
Name:	J. H. van der Waals
Qualifications:	Ph.D. Soil Science
Affiliation (if applicable):	• Member of the Soil Science Society of South Africa (SSSSA); • Accredited member of the South Africa Soil Surveyors Organisation (SASSO); and • Registered with the South African Council for Natural Scientific Professions (Reg No: 400106/08).

16.3.2.5 Socio-Economic Impact Assessment

Summary of Key Issues & Triggers Identified During Scoping:

- Loss of land in project footprint;
- Impacts to surrounding properties;
- Impacts on visual quality; and
- Construction-related impacts.

Approach:

- Determine the specific local socio-economic, land utilisation and acquisition implications of the project.
- Assess the impacts of both 'giving' and receiving water systems on livelihoods, health and safety of affected communities.
- Collect baseline data on the current socio-economic environment.
- Assess socio-economic impacts (positive and negative) of the project, and quantify the economic impacts.
- Undertake a thorough review of the following:
    - Minutes of meetings; and
    - Comments and Responses Report.
- Suggest suitable mitigation measures to address the identified impacts.
- Make recommendations on preferred options from a socio-economic perspective.

Nominated Specialist:

Organisation:	Nemai Consulting
Name:	Ciaran Chidley
Qualifications:	BA (Economics); BSc Eng (Civil); MBA
Affiliation (if applicable):	N/A

16.4 Public Participation – EIA Phase

16.4.1 Updating of IAP Database

The IAP database will be updated as and when necessary during the execution of the EIA.

16.4.2 Review of Draft EIA Report

IAPs will be notified of the approval of the Scoping Report and the public review period of the Draft EIA Report at the same time. Registered IAPs will be notified of the approval and review period by emails or SMS. These notices will also include information on the public meeting for the EIA Phase.

16.4.3 Public Meetings

A public meeting is not envisioned for the EIA Phase, however should one be requested by an IAP, then the details of the meeting will be communicated to all registered IAPs during the review period of the EIA Report.

16.4.4 Comments and Responses Report

A Comments and Responses Report will be compiled and included in the EIA Report, which will record the date that issues were raised, a summary of each issue, and the response of the team to address the issue. In addition, any unattended comments from the Scoping Phase or where the status of the previous responses has changed, will also be addressed in the Comments and Responses Report for the EIA phase.

16.4.5 Notification of DEA Decision

All IAPs will be notified via email, fax or post after having received written notice from DEA on the final decision on the application. Advertisements will also be placed in the newspapers listed in **Section 13.3.3**. These notifications will include the appeal procedure to the decision.

16.5 EIA Report

The EIA Report will contain the information that is necessary for DEA to consider and come to a decision on the application. As a minimum, the EIA Report will contain the information stipulated in Appendix 3 of GN No. R 982 of 4 December 2014 (as amended).

The following critical components of the EIA Report are highlighted:

- A description of the policy and legislative context;
- A detailed description of the proposed development (full scope of activities);
- A detailed description of the proposed development site, which will include a plan that locates the proposed activities applied for as well as the associated structures and infrastructure;
- A description of the environment that may be affected by the activity and the manner in which physical, biological, social, economic and cultural aspects of the environment may be affected by the proposed development;
- The methodology of the stakeholder engagement process;
- The Comments and Responses Report and IAPs Database will be provided as an appendix to the EIA Report;
- A description of the need and desirability of the proposed development and the identified potential alternatives to the proposed activity;
- A summary of the methodology used in determining the significance of potential impacts;
- A description and comparative assessment of the project alternatives;
- A summary of the findings of the specialist studies;
- A detailed assessment of all identified potential impacts;
- A list of the assumptions, uncertainties and gaps in knowledge;
- An environmental impact statement;
- Any aspects which were conditional to the findings of the assessment either by the EAP or specialist which are to be included as conditions of authorisation;
- A reasoned opinion as to whether the proposed activity should or should not be authorised, and if the opinion is that it should be authorised, any conditions that should be made in respect of that authorisation;
- An opinion by the consultant as to whether the development is suitable for approval within the proposed site;
- An EMPr that complies with Appendix 4 of GN No. R 982 of 4 December 2014 (as amended);
- Copies of all specialist reports appended to the EIA report; and
- Any further information that will assist in decision making by the authorities.

16.6 Authority Consultation

The EIA Phase will only commence if DEA accepts the Scoping Report and the Plan of Study. If relevant, the necessary revisions will be made to the aforementioned documents if requested by this Department.

An authorities meeting will be scheduled during the EIA public participation process to present salient findings. In addition, copies of the Draft EIA Report will be provided to the key identified regulatory and commenting authorities.

The final EIA Report will be submitted to DEA. Any requested amendments will be discussed with the Department to ensure that their queries are adequately and timeously attended to.

For the remainder of the Scoping process and EIA, the interaction with DEA will be as follows:

- Submission of the Final Scoping Report;
- Meet with designated DEA Environmental Officer to explain the project and arrange a site visit (if required by DEA);
- Address comments on Scoping Report;
- Arrange an authorities meeting during the EIA stage;
- Submit EIA Report;
- Address comments on EIA Report;
- Obtain a decision; and
- Notify IAPs of the appeal process through DEA's appeals unit.

16.7 EIA Timeframes

The table to follow presents the proposed timeframes for the EIA process. *Note that these dates are subject to change*.

Table 29: EIA Timeframes

EIA Milestone	Start	Finish
Submit Application Form and Draft Scoping Report to DEA	10/07/2019	
Review of Draft Scoping Report by authorities & IAPs	11/07/2019	12/08/2019
Submit Final Scoping Report to DEA	20/08/2019	
DEA Review and Decision of Final Scoping Report	21/08/2019	13/10/2019
Review of Draft EIA Report by authorities & IAPs	31/10/2019	29/11/2019
Submit Final EIA Report & EMPr to DEA	09/12/2019	
DEA Review and Decision	10/12/2020	26/02/2020

17 OATH OF THE EAP AND DECLARATION OF INDEPENDENCE

I (name and surname) Christian v.d. Hoven

At (address) 147 Bram Fischer Drive, Ferndale, 2194

ID No. 9309155161082

Hereby make an oath and state that:

In Accordance with Appendix 2 of G.N. R. 982 (04 December 2014), this serves as an affirmation by the Environmental Assessment Practitioner (EAP) in relation to:

Section 2(j)

i. The correctness of the information provided in this report;
ii. The inclusion of comments and inputs from stakeholders and interested and affected parties (IAPs);
iii. The inclusion of inputs and recommendations from the Specialist Reports where relevant; and
iv. Any information provided by the EAP to IAPs and any responses by the EAP to comments or inputs made by IAPs.

1. I know and understand the contents of this declaration.
2. I do not have any objection in taking the prescribed oath.
3. I consider the prescribed oath to be binding on my conscience.

Signature _____ Date 09-07-2019

I certify the deponent has acknowledged that he/she knows and understands the contents of the statement and the deponent signature was placed there in my presence.

_____	Vusumuzi Nkuli	C.A.C
Commissioner of Oath	Full name	Designation

ADMINISTRATION
2019 -07- 09
JOHANNESBURG NORTH MAGISTERIAL DISTRICT
RANDBURG MAIN COURT

18 REFERENCES

Animal Demography Unit, 2018a. FrogMAP virtual museum. Accessed at http://vmus.adu.org.za/?vm=frogmap on 2019-02-20.

Animal Demography Unit, 2018a. MammalMAP virtual museum. Accessed at http://vmus.adu.org.za/?vm=mammalmap on 2019-02-20.

Animal Demography Unit, 2018b. ReptileMAP virtual museum. Accessed at http://vmus.adu.org.za/?vm=reptilemap on 2019-02-20

Barbour, T., 2007. Guideline for Involving Social Assessment Specialists in EIA Processes. Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Brownlie, S., 2005. Guideline for involving biodiversity specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 C. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Capricorn DM, 2016. Draft Integrated Development Plan 2016/2017 – 2020/2021. Capricorn District Municipality, Polokwane.

Capricorn DM, 2018. Draft Capricorn District Bioregional Plan 2018. Capricorn District Municipality, Polokwane.

Desmet, P.G., Holness, S., Skowno, A. & Egan, V.T. (2013). Limpopo Conservation Plan v.2: Technical report. Contract number EDET/2216/2012. Report for Limpopo Department of Economic Development, Environment & Tourism (LDEDET) by ECOSOL GIS.

Keatimilwe, K. & Ashton, P.J., 2005. Guideline for the Review of Specialist Input into the EIA. Process: Edition 1. CSIR Report No ENV-S-C 2005 053 B. Provincial. Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Low, A.B. & Rebelo, A.G., 1996. Vegetation of South Africa, Lesotho and Swaziland, Department of Environmental Affairs and Tourism, Pretoria. 0-621-17316-9 ISBN.

Mucina, L and Rutherford, MC (eds), 2006. The vegetation of South Africa, Lesotho and Swaziland. Strelitzia 19. South African Biodiversity Institute, Pretoria.

Münster, F., 2005. Guideline for determining the scope of specialist involvement in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 A. Republic of South Africa, Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Polokwane IWMP, 2016. Final Integrated Waste Management Plan March 2016. Polokwane Local Municipality, Polokwane.

Polokwane LM, 2018. Final Integrated Development Plan 2018/2019. Polokwane Local Municipality, Polokwane.

Polokwane LM, 2010. Spatial Development Framework 2010 (amended January 2017). Polokwane Local Municipality, Polokwane.

Rutherford, M.C. & Westfall, R.H. (1994). Biomes of Southern Africa: an objective characterisation. *Mem. Bot. Surv. S. Afr. No*. 63.

Sakhiwo, 2018. Draft Limpopo Central Hospital-Feasibility Report-SIPDM: Gateway 4, Rev 1. Sakhiwo Health Solutions, Pretoria.

Statistics South Africa, 2013. Statistics South Africa, Pretoria.

Winter, S. & Baumann, N., 2005. Guideline for involving heritage specialists in EIA processes: Edition 1. CSIR Report No ENV-S-C 2005 053 E. Provincial Government of the Western Cape, Department of Environmental Affairs & Development Planning, Cape Town.

Websites:

https://en.climate-data.org/africa/south-africa/limpopo/polokwane-3759/

http://sabap2.adu.org.za/coverage.php

https://www.gov.za/issues/national-infrastructure-plan