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SECTION 24G RECTIFICATION

ENVIRONMENTAL ASSESSMENT IN TERMS OF SECTION 24G OF NEMA FOR THE PROPOSED FORMALISATION OF MABUZA INFORMAL SETTLEMENT ON PORTION 8 OF THE FARM BUHRMANNS TAFELKOP 135 IT MSUKALIGWA LOCAL MUNICIPALITY, MPUMALANGA PROVINCE.

REFERENCE NUMBER: N/A

Prepared for:

human settlements
MPUMALANGA PROVINCE
REPUBLIC OF SOUTH AFRICA

REPORT DATE: 04 MAY 2020

DOCUMENT CONTROL

Item	Description
Proposed development and location	The proposed formalisation of Mabuza Informal Settlement on Portion 8 of the Farm Buhrmanns Tafelkop 135 IT Msukaligwa Local Municipality, Mpumalanga Province.
Purpose of the study	To undertake and submit the required Environmental Assessment application in terms of Section 24G of NEMA to formalize the Mabuza informal settlement by construction of an integrated sustainable human settlement (township establishment) in Ermelo Town, Msukaligwa Local Municipality, Mpumalanga Province.
Coordinates	Part two section 2
Municipalities	Msukaligwa Local Municipality
Predominant land use of surrounding area	Agriculture, Residential area (Informal settlement)
Applicant	Mpumalanga Department of Human Settlements
Prepared for:	**MPUMALANGA DEPARTMENT OF HUMAN SETTLEMENTS** Government Blvd Riverside Park Private Bag X 11328 Nelspruit. 1201 Tel: 013 766 6088, Fax: 013 766 8441 Website: dhs.mpg.gov.za
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Authors	Moses Kgopana (Pr.Sci.Nat)
Date of Report	28/04/ 2020

DRAFT DOCUMENT	Prepared by: Moses Kgopana	Reviewed by: Irene Rampoto Ngwenya	Approved by:
Date: 28 April 2020	Signature:	Signature:	Signature:

DECLARATION OF INDEPENDENCE

I, **Moses Kgopana**, do hereby declare that I am financially and otherwise independent of the client and their consultants, and that all opinions expressed in this document are substantially my own, notwithstanding the fact that I have received fair remuneration from the client for preparation of this report.

Expertise:

Mr Moses Kgopana has worked with Limpopo Water Initiative (LWI) from 2010 as an Environmental Officer. He worked on various projects with Eskom applying for environmental authorisations for power line and substations. He was also a supervisor on the remediation of oil spillages within Eskom' substations.

He also worked with Engineerex (Pty) Ltd from March 2014 as an Environmentalist in the development of Resource Management Plans for the Department of Water and Sanitation.

Independence

The views expressed in this document are the objective, independent views of Moses Kgopana and the survey was carried for Nkolelo Projects. OURA Solutions has no any business, personal, financial or other interest in the proposed development apart from fair remuneration for the work performed.

Conditions relating to this report

The content of this report is based on the author's best scientific and professional knowledge as well as available information. OURA reserves the right to modify the report in any way deemed fit should new, relevant or previously unavailable or undisclosed information become known to the author from on-going research or further work in this field, or pertaining to this investigation.

This report must not be altered or added to without the prior written consent of the author and the client. This also refers to electronic copies of the report which are supplied for the purposes of inclusion as part of other reports, including main reports. Similarly, any recommendations, statements or conclusions drawn from or based on this report must make reference to this report. If these form part of a main report relating to this investigation or report, this report must be included in its entirety as an appendix or separate section to the main report.

Authorship: This Section 24G Report has been prepared by Moses Kgopana. The report is for the review by the Mpumalanga Department of Agriculture, Rural Development, and Environment Affairs.

Geographic Co-ordinate Information: Geographic co-ordinates in this report were obtained using a hand-held Garmin Global Positioning System device. The manufacturer states that these devices are accurate to within +/- 5 m.

Maps: Maps included in this report use data extracted from the NTS Map and Google Earth Pro.

Disclaimer: The Authors are not responsible for omissions and inconsistencies that may result from information not available at the time this report was prepared.

Signed by:

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28/04/ 2020

ACKNOWLEDGEMENTS

The authors acknowledge the Mpumalanga Department of Human Settlement and Nkolele Projects for their assistance with project information, and the associated project background Information documents as well as responding to technical queries related to the project.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

TERMS AND DEFINITIONS

CBA	Critical Biodiversity Area
DARDLEA	Department of Agriculture, Rural Development, Land and Environmental Affairs
DEA	Department of Environment Affairs
DHS	Department of Human Settlement
DEFF	Department of Environment, Forestry and Fisheries
DWS	Department Water and Sanitation
EAP	Environmental Assessment Practitioner
ECO	Environmental Control Officer
EIA	Environmental Impact Assessment
GNR	Government Notice Regulation
IEM	Integrated Environmental Management
I&AP's	Interested and Affected Parties
IDP	Integrated Development Programme
NEMA	National Environmental Management Act
NEMBA	National Environmental Management Biodiversity Act
NEM:WA	National Environmental Management Waste Act
NHRA	National Heritage Resource Act
OURA	OURA Solutions (Pty) Ltd
PPP	Public Participation Process
WMA	Water Management Areas

STRUCTURE OF THE REPORT

This report is broadly structured as tabled below:

Section A	The Project Team and Proponent
Section B	Activity Information
Section C	Information on Assessment Factors
Section D	Public Participation Process
Section E	Impact Assessment and Mitigation
Section F	Proposed Monitoring, Control and Auditing
Section G	Environmental Impact Statement
Section H	Conclusions and EAP's Recommendation

The legislated content requirements for Environmental study are contained in Appendices of the Environmental Impact Assessment Regulations (2017) as amended. For ease of reference, the table below cross references the content requirements and related section number in this report.

NO.	REQUIREMENTS	INCLUDED THIS IN REPORT	SECTION REFERENCE
Á	Details of the EAP who prepared the report, including the expertise of the EAP, including curriculum vitae.	**X**	CV and Qualification attached in Appendix H.
B (i)	The location of the activity, including the 21 digit Surveyor General code of each cadastral land parcel	**X**	Section B.
(ii)	The physical address and farm name of the activity	**X**	Section B
(iii)	The coordinates of the boundary of the property or properties	**X**	Section B
C	A plan which locates the proposed activity or activities applied for as well as associated structures and infrastructure at an appropriate scale; or, if it is on land where the property has not been defined, the coordinates within which the activity is to be undertaken;	**X**	Locality Maps Attached in Appendix A.
D	A description of the scope of the proposed activity, including a description of the activities to be undertaken and associated structures and infrastructure and including all listed and specified activities triggered and being applied for as well as the	**X**	Section B
e	A description of the policy and legislative context within which the development is proposed including an identification and description of compliance to all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks, and instruments that are	**X**	Section B

	applicable to this activity and have been considered in the preparation of the report		
F	A motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	**X**	Section B
G	A motivation for the preferred site, activity and technology alternative	**X**	Section B
H (i)	A full description of the process followed to reach the proposed preferred alternative within the site, including details of all the alternatives considered	**X**	Section B
(ii)	Details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs	**X**	Public Participation documents attached in Appendix E
(iii)	Summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	**X**	
(iv)	The environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;	**X**	Section B
(v)	The impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the 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;	**X**	Section E
(vi)	The methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	**X**	Section E
(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	**X**	Section B
(viii)	The possible mitigation measures that could be applied and level of residual risk	**X**	Section E
(ix)	A full description of the process followed to reach the proposed preferred alternative within the site, including the outcome of the site selection matrix	**X**	Section E

(x) (xi)	A full description of the process followed to reach the proposed preferred alternative within the site, including if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such, as well as a concluding statement indicating the preferred alternatives, including preferred location of the activity	**X**	
I(i)	A full description of the process and methodology used to identify, assess and rank the impacts the activity will impose on the preferred location through the life of the activity, including a description of all environmental issues and risks that were identified during the environmental impact assessment process;	**X**	Section B
J	An assessment of each identified potentially significant impact and risk, including cumulative impacts, the nature, significance, consequences, extent, duration, probability of the impact and risk, as well as the degree to which the impact and risk may cause irreplaceable loss of resources and the degree to which the impact and risk can be avoided, managed or mitigated	**X**	Appendix F
K	Where applicable, a summary of the findings and impact management measures identified in any specialist report	**X**	Section C
L	An environmental impact statement which contains a summary of the key findings of the environmental impact assessment and a map at an appropriate scale which superimposes the proposed activity and its associated structures and infrastructure on the environmental sensitivities of the preferred site indicating any areas that should be avoided, including buffers. It must also contain a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;	**X**	Section C
M	Based on the assessment, and where applicable, impact management measures from specialist reports, the recording of the proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr.	**X**	Specialist reports in Appendix D
N	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	**X**	Specialist reports in Appendix D
O	A description of any assumptions, uncertainties, and gaps in knowledge which relate to the assessment and mitigation measures proposed	**X**	

P	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	**X**	Section H
Q	Where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required, the date on which the activity will be concluded, and the post construction monitoring requirements finalised.	**N/A**	**N/A**
R	An undertaking under oath or affirmation by the EAP in relation to the correctness of the information provided in the reports, the inclusion of comments and inputs from stakeholders and I&APs, the inclusion of inputs and recommendations from the specialist reports where relevant and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested and affected parties	**X**	N/A
S	Where applicable, details of any financial provisions for the rehabilitation, closure, and ongoing post decommissioning management of negative environmental impacts;	**N/A**	N/A
T	Any specific information that may be required by the competent authority	**X**	See production manufacturing process in Appendix J
U	Any other matters required in terms of section 24(4)(a) and (b) of the Act.	N/A	N/A

SECTION A: THE PROJECT TEAM AND PROPONENT

1. INTRODUCTION

OURA Solutions was appointed by Nkolele Project on behalf of Department of Human Settlement (DHS) to conduct an Environmental Assessment for the formalisation of Mabuza Informal Settlement by creation of an integrated sustainable human settlement on Portions 8 of the farm Buhrmanns Tafelkop 135 IT in Ermelo Town of Msukaligwa Local Municipality, Mpumalanga Province. This Environmental assessment was done in terms of Section 24G of National Environmental Management Act, 1998 (Act No.107 of 1998), to rectify and undertake the listed activities in terms of Government Notice Regulation (GNR) 326 of the Environmental Impact Assessment Regulation, 2017 as amended.

The proposed development comprises activities listed in the National Environmental Management Act (Act 107 of 1998) [NEMA], for which environmental authorisation is required. For the NEMA activities, an Environmental Impact Assessment (EIA) process was undertaking in support of the Section 24G application as described in the NEMA EIA Regulations in Government Notice (GN) R325 and R327 of 2017, as amended.

1.1 Details of Applicant

The contact details of the applicant are provided in **Table 1** below. The applicant has an agreement with the property owners were the development is to take place.

Table 1: Details of Developer/Applicant

Name of Applicant:	Department of Human Settlement
Tel No:	013 766 6088
Fax No:	013 766 8441
Postal Address:	Private Bag X 11328, Nelspruit. 1201
Physical Address:	Government Blvd, Riverside Park, Nelspruit. 1201

1.2 Details of the Environmental Consulting Team

OURA Solutions (OURA) is an independent environmental consultancy retained by Nkolele Project on behalf of Department of Human Settlement (DHS) to undertake and submit the required application for the proposed construction of an integrated sustainable human settlement (township establishment) in Msukaligwa Local Municipality, Mpumalanga Province.

This report was prepared by Moses Kgopana (OURA) and reviewed by Irene Rampoto Ngwenya (OURA). OURA Solutions does not have any financial or other interests in the undertaking of the proposed activity, other than remuneration for work performed in terms of the National Environmental Management Act, 1998 (Act 107 of 1998) (NEMA), the Environmental Impact Assessment Regulations, 2017, as amended, and any specific environmental management Act; and does not have any vested interest in the proposed activity. The contact details and experience of the Environmental Assessment Practitioner (EAP) undertaking the application are provided from **Table 2** and **Table 5** respectively and proof of qualification is attached in Appendix H.

Table 2: EAP Details

Name of The Practitioner:	Moses Kgopana (Pr.Sci.Nat)
Tel No:	076 328 1558
Fax No:	086 652 9774
Physical Address:	Constantia Park, Building 16-2, 546, 16th Road, Midrand, 1685

Table 3: Project Team

Name	Role on the team	Company
Applicant Team		
Doctor Nkosi	Applicant representative	Mpumalanga Department of Human Settlement
Environmental Team		
Moses Kgopana	EAP	OURA Solutions
Irene Rampoto Ngwenya	Project Manager	OURA Solutions
Specialists		
Trust Mlilo	Heritage Impact Assessment	Integrated Specialist Services
Witness Dube	Wetland and Ecological Impact Assessments	Integrated Specialist Services
Engineers/Implementing Agent		
Michael Dihlake	Implementing Agent Representative	Nkolele Projects

1.3 Expertise of the EAP

Table 4: EAP Expertise

Mr. Moses Kgopana **<u>Education</u>**

BA (Environmental Management) (Hons): University of Venda- 2010

Memberships

In the process of Registering as Natural Scientific Professional (Environmental Scientist): SACNASP, 2016 (Environmental)

International Association for Impact Assessments SA (IAIAsa) - 2016

1.4 Summary of the EAP's Past Experience

Table 5: EAP Experiences

Mr Moses Kgopana has worked with Limpopo Water Initiative (LWI) from 2010 as an Environmental Officer. He worked on various projects with Eskom applying for environmental authorisations for power line and substations. He was also a supervisor on the remediation of oil spillages within Eskom' substations.

He also worked with Engineerex (Pty) Ltd from March 2014 as an Environmentalist in the development of Resource Management Plans for the Department of Water and Sanitation until joining OURA Solutions.

1.5 Environmental Authority

The relevant environmental authority is the Mpumalanga Department of Agriculture, Rural Development, and Environment Affairs (DARDEA).

1.6 Purpose of the Report

The main purpose of this report is to:

- To rectify and undertake the listed activities in terms of Government Notice Regulation (GNR) 326 of the Environmental Impact Assessment Regulation, 2017 as amended;
- Determine the policy and legislative context within which the activity is located and how the activity complies with and responds to said policy and legislative context;
- Identify the alternatives or motivations considered, including the activity, site location, and layout alternatives;
- State the need and desirability of the proposed activity;
- Provide a description of the receiving environment that would be affected by the proposed activity;
- Identify the preferred site through a detailed site selection process, which includes an impact and risk assessment process inclusive of cumulative impacts and a ranking process of the identified

preferred alternatives focusing on the geographical, physical, biological, social, economic and cultural aspects of the environment;

- Determine the significance, duration and probability of the impacts occurring to inform the technology and micro siting of the activity on the site;
- Identify the most compatible micro-siting for the activity;
- Identify, assess and rank the significant impacts and risks the activity will impose on the preferred site through the lifetime of the activity;
- Identify suitable measures to avoid, reverse, mitigate or manage identified impacts;
- Identify residual risks that need to be managed and monitored;
- Describe the public participation process that was undertaken; and
- Make recommendations for decision-making.

SECTION B: ACTIVITY INFORMATION

2. INTRODUCTION AND BACKGROUND

The proposed project entails the formalisation of Mabuza informal settlement by creating an integrated sustainable human settlement on Portions 8 of the farm Buhrmanns Tafelkop 135 IT in Ermelo Town of Msukaligwa Local Municipality, Mpumalanga Province. This Environmental assessment was done in terms of Section 24G of National Environmental Management Act, 1998 (Act No.107 of 1998), to rectify and undertake the listed activities in terms of Government Notice Regulation (GNR) 326 of the Environmental Impact Assessment Regulation, 2017 as amended.

The township establishment process entails construction/upgrading of the already existing 700 informal houses to low cost residential housing located in Portion 8 with the intention to increase the number of units to be catered for to about 1298 units including the already existing 700 households.

Mabuza Farm is an informal settlement located in Portion 8 of Buhrmanns Tafelkop 135 IT in Ermelo. Currently those who reside in this settlement have no legal ownership on the land. In order to address the housing backlog and social objectives, the Mpumalanga Human Settlements Department (DHS) appointed Nkolele Projects as the Implementing Agent to manage the creation of an integrated sustainable human settlement.

Mabuza Farm Informal Settlement is mainly a residential area with very few business activities and there is no localised economic base. Most of the residents commute to work in nearby areas (Ermelo town, mines and other surrounding areas). All the ±700 households have no legal status. Mabuza Farm Informal Settlement is mainly surrounded by private land. In dealing with the future land issue for human settlement, the client's other alternative is to purchase land from private landowners in order to create a sustainable human settlement for all the residents of Mabuza Farm Informal Settlement., due to its inherent "non-legal" status and has services and infrastructure below the "adequate" or minimum levels. Such services are both network and social infrastructure, like water supply, sanitation, electricity, roads and drainage systems.

In order to improve the lives of the residents and meet the minimum standards there will be design and construction of new housing units which include its associated Infrastructure and services such as:

- Bulk Storm Water

- Bulk Sewers
- Bulk Water Supply
- Bulk Electrical Supply
- Solid Waste Management
- Access, Internal Roads and Public Transport

2.1 Regional Settings

The proposed project site is located in Portion 8 of the farm Buhrmanns Tafelkop 135 IT north of the town of Ermelo within Msukaligwa Local Municipality of Mpumalanga Province. The GPS coordinates of the development area are as follows:

- Latitude: 26°29'58.99"S
- Longitude: 30° 0'3.37"E

See Locality Maps as **Figure 1 and Figure 2** below:

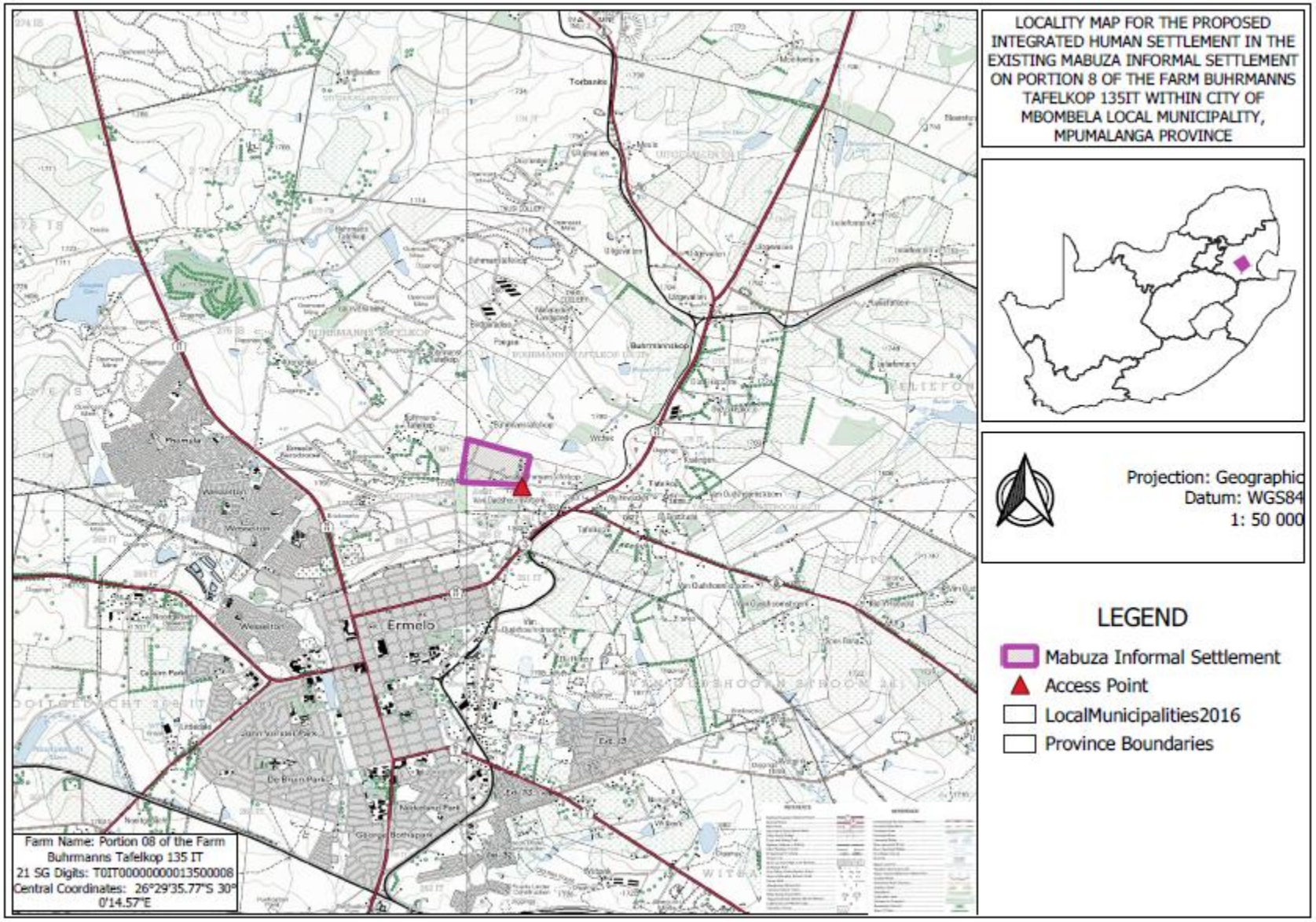

Figure 1: Locality Map

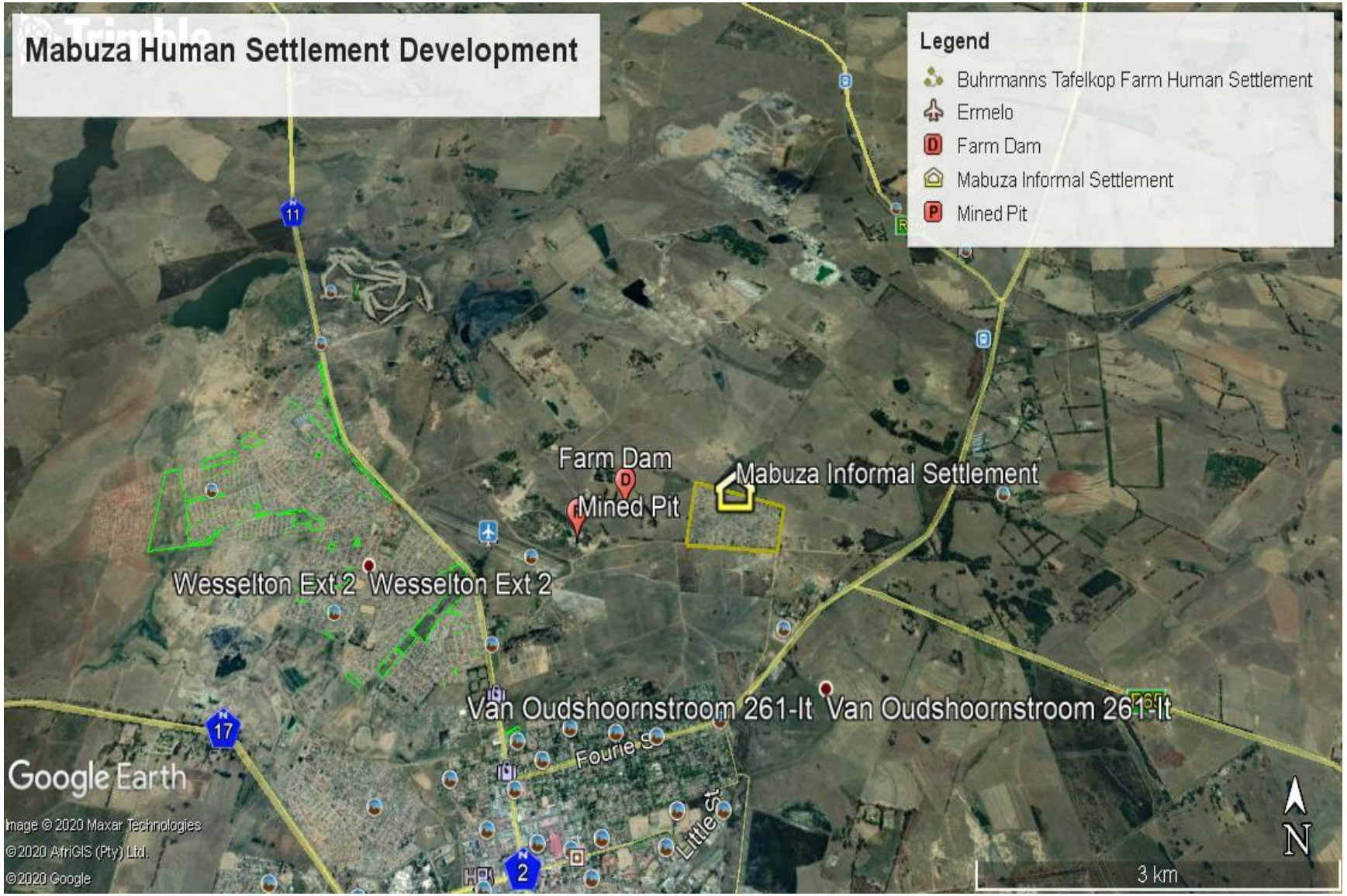

Figure 2: Locality Map

2.2 Applicable Legislation, Policies and/or Guidelines

The Environmental authorization process is done in terms of Section 24G of the 2014 Environmental Impact Assessment Regulations, as amended in 2017 to rectify and undertake the listed activities in terms of R327 and R 326 promulgated under the National Environmental Management Act, Act No. 107 of 1998. The following process was undertaken in support of the S24G application

An Environmental Impact Assessment (EIA) is undertaken in terms of the NEMA, for submission to the MDARDLEA; refer to Table 6 for a list of activities which unlawfully commenced with in terms of the EIA Regulations promulgated in terms of the NEMA:

Table 6: Activities unlawfully commenced in terms of the EIA Regulation Promulgated in terms of the NEMA, 1998.

Government Notice R327 (as amended) Activity No.	**Describe the relevant Basic Assessment and Environmental Impact Assessment Activities in writing as per Listing Notice 1 (GN No. R327 and Listing Notice 2 (GN No. 326), as amended)**	**Describe the portion of the development as per the project description that relates to the applicable listed activity**
GN No R 327 of 07 April 2017: Listing Notice 1, Activity No. 9	The development of infrastructure exceeding 1 000 metres in length for the bulk transportation of water or storm water— (i) with an internal diameter of 0,36 metres or more; or (ii) (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for bulk transportation of water or storm water or storm water drainage inside a road reserve or railway line reserve; where such development will occur within an urban area.	The construction of pipelines for bulk transportation of water and also storm water within the housing development.

GN No R 327 of 07 April 2017: Listing Notice 1, Activity No. 10	The development and related operation of infrastructure exceeding 1 000 metres in length for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes – (i) with an internal diameter of 0,36 metres or more; or (ii) (ii) with a peak throughput of 120 litres per second or more; excluding where— (a) such infrastructure is for the bulk transportation of sewage, effluent, process water, waste water, return water, industrial discharge or slimes inside a road reserve or railway line reserve; or (b) where such development will occur within an urban area.	The construction of infrastructures for bulk transportation of sewer within the housing development.
GN No R 327 of 07 April 2017: Listing Notice 1, Activity No. 13	The development of facilities or infrastructure for the off-stream storage of water, including dams and reservoirs, with a combined capacity of 50 000 cubic metres or more, unless such storage falls within the ambit of activity 16 in Listing Notice 2 of 2014.	The construction of reservoirs for storage of water.
GN No R 326 of 07 April 2017: Listing Notice 2, Activity No. 15	The clearance of an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or	The proposed Integrated Sustainable Human Settlement on portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT, entailing the township establishment process within the Msukaligwa Local Municipality, Mpumalanga Province. There are also traces of overgrazing in the area.

	(ii) maintenance purposes undertaken in accordance with a maintenance management plan.	

This EA process complies with the requirements of both the 2014 EIA Regulations and the 2017 Amendment of the 2014 EIA Regulations and the requirements and guidelines of the Provincial Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA).

Table 7: Legislation and Guidelines Considered in the Preparation of the Draft BAR

LEGISLATION	ADMINISTERING AUTHORITY
The National Environmental Management Act, Act 107 of 1998, as amended.	DARDLEA
EIA regulations in terms of Chapter 5 of the NEMA, 1998. Regulations 326, 327, 325 and 324 of April 2017	DARDLEA
Guideline Document, EIA Regulations, Implementation of Sections 21, 22 and 26 of the Environment Conservation Act, 1998	DEFF
DEA Integrated Environmental Management Guideline Series, Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 200	DEFF
DEA Integrated Environmental Management Guideline Series, Guideline 4: Public Participation in support of the Environmental Impact Assessment Regulations, 200	DEFF
DEA Integrated Environmental Management Guideline Series, Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006	DEFF
DEA Companion to the NEMA EIA Regulations of 2010	DEFF
DEA Integrated Environmental Management Guideline Series, Guideline 5: Companion to the Environmental Impact Assessment Regulations, 2012	DEFF
National Water Act (No. 37 of 1998)	DWS

Table 8: Compliance with legislation

Description of compliance with the relevant legislation, Policy or Guideline

Legislation, Policy of guideline	Description of Compliance
National Environmental Management Act, 1998 (Act No. 107 of 1998 as amended).	The Environmental Authorisation for the proposed development is lawfully applied for in terms of the EIA Regulations, 2014, promulgated under NEMA. The conditions on the Environmental Authorisation, if approved, will be adhered to.
National Heritage Resources Act, 1999 (Act No. 25 of 1999)	The proposed project will be submitted to the South African Heritage Resources Agency (SAHRA) online platform South African Heritage Resources Information System (SAHRIS)
National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004)	The National Environmental Management Biodiversity Act, 2004 (Act No. 10 of 2004) as amended (NEMBA) including all the pertinent legislation published in terms of this act was considered in undertaking process. This included the determination and assessment of the fauna and flora prevailing in the proposed project and the handling thereof in terms of NEMBA
National Environmental Management Waste Act, 2009 (Act No. 59 of 2008)	The Waste Management practices will be undertaken in respect of the National Environmental Management: Waste Act (Regulations published in GNR 921 on the 29 November 2013 Government Gazette No 37083) as amended NEM:WA. Pieces of legislation published under this act will be adhered to.
Environmental Impact Assessment Regulations, 2014	All the triggered activities as per National Environmental Management Act (Act No. 107 of 1998) have been listed below.
National Development Plan: A Vision for 2030	The South African Government through the Presidency has published a National Development Plan. The Plan aims to eliminate poverty and reduce inequality by 2030. The Plan has the target of developing people's capabilities to be to improve their lives through education and skills development, health care, better access to public transport, jobs, social protection, rising income, housing

	and basic services, and safety. It proposes the following strategies to address the above goals: 1. Creating jobs and improving livelihoods; 2. Expanding infrastructure; 3. Transition to a low-carbon economy; 4. Transforming urban and rural spaces; 5. Improving education and training; 6. Providing quality health care; 7. Fighting corruption and enhancing accountability; and 8. Transforming society and uniting the nation

2.3 Feasible and Reasonable Alternative

2.3.1 Alternatives

The proposal and alternatives that are considered in this application will be described in Table 9 below. Alternatives will include a consideration of all possible means by which the purpose and need of the proposed activity could be accomplished. The determination of whether the site or activity (including different processes etc.) or both is appropriate needs to be informed by the specific circumstances of the activity and its environment.

Table 9: Description of the alternatives considered

No.	Alternative type, either alternative: site on property, properties, activity, design, technology, energy, operational or other(provide details of "other")	Description
1.	Proposal (preferred alternative)	**Site location & layout:** The government is undertaking the development for the community of Mabuza informal settlement; it is therefore ideal to construct on the already existing site. The occupiers will be relocated to a temporary accommodation before construction to allow for undisturbed construction activities. Due to the listed above, there have been no alternative properties or locations identified for the proposed project.

		Therefore this is the only property (Portions 8 of the farm Buhrmanns Tafelkop 135 IT) the applicant can perform the proposed activities because the surrounding properties are privately owned. Therefore, no alternate Site have been investigated.
2.	Property Alternative	The government is undertaking the development for the community of Mabuza informal settlement; it is therefore ideal to construct on the already existing site. The occupiers will be relocated to a temporary accommodation before construction to allow for undisturbed construction activities. Due to the listed above, there have been no alternative properties or locations identified for the proposed project. Therefore this is the only property (Portions 8 of the farm Buhrmanns Tafelkop 135 IT) the applicant can perform the proposed activities because the surrounding properties are privately owned. Therefore, no alternate properties have been investigated.
3.	Activity Alternative	The activity is the establishment of an Integrated Sustainable Human Settlement on portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT, entailing the township establishment process within the Msukaligwa Local Municipality, Mpumalanga Province. It is therefore clear that there will be no Activity Alternative with reference to this application.
4.	Design or Layout Alternative	The proposed design and layout will be placed on the property in a means which minimise the impact it may have on the environment.
5.	Technology to be used	The most appropriate construction methods and technology will be used based on what is available in terms of equipment as well as materials. Construction technology will also be chosen in terms of what would be least harmful to the environment. Conditions relating to the construction methodology are included in the Environmental Management Programme (Appendix G). For this reason, technology alternatives will not be assessed in this report.
6	No-go Alternative	This alternative assumes that the current status quo will remain unchanged. Should the no-go alternative be the preferred option, the safety risks will remain.

2.4 Criteria, Dimensions and Standards

Table 10: Size of the development

Item	Site Name	Area (ha)	Coordinates
Site 1	Mabuza Settlement	52 ha	Latitude: 26°29'58.99"S Longitude: 30° 0'3.37"E

NB: Please see the design layout in appendix C

2.5 NEED AND DESIRIBILITY

ECONOMIC BENEFIT

The following questions pertaining to the Need and Desirability of the proposed development, which are based on existing Need and Desirability Guidelines, have been addressed:

NEED

1. Is the proposed land use considered appropriate within the timeframe intended by the approved SDF and as agreed to by the relevant authority?

- **Yes**

2. Does the community/area need the activity, in other words, is it a societal priority?

- **Yes**, Mabuza Farm Informal Settlement has housing units (hovels) which are below the normal standards. The hovels have been developed without compliance with any planning and building code norms and have made servicing and maintenance very difficult. Therefore it is a priority to build houses which are within the required standards to be utilized by humans.

3. Are the requisite infrastructural services available?

- **Yes**, In January 2010, Cabinet adopted 12 Outcomes within which to frame public service delivery priorities. Cabinet Ministers signed Performance Agreements linked to these Outcomes. More detailed Delivery Agreements have since been developed to extend targets and responsibilities to National and Provincial Departments, Agencies and Municipalities. All municipalities are expected to consider the 12 Outcomes when reviewing their IDP's and developing their annual Budgets. Outcome 8 refers to the development of Sustainable human settlements and improved quality of household life. There are already funds to establish the Mabuza housing development.

4. Is this project part of a national programme to address an issue of national concern or importance?

- Yes, the development proposal aligns with local and provincial government's spatial and economic planning imperatives for the area, such as the local SDF.

DESIRABILITY

1. Is the activity the best practicable environmental option (in other words to ensure that the development will be socially, economically and environmentally sustainable) for the site?

- Yes. The assessment of the impacts associated with the development contained in Section 13 below, finds that the proposed development is the preferred alternative for this current site. Further, there are limited associated negative impacts which can be mitigated to an acceptable level; together with several positive socio-economic impacts associated with the development.

2. Would the approval of the application compromise the integrity of the approved IDP and SDF agreed by the relevant authority?

- No. As mentioned in the "Need" component, the development proposal aligns with local and provincial government's spatial and economic planning imperatives for the area, such as the local SDF.

3. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area?

- No. The proposed development will not influence the wetland or the river in any way.

4. Is this site the best site for the proposed land use?

- Yes. Please refer to the assessment of impacts contained in Section 13 below, which finds that the positive impacts associated with the proposed development. However the development is going to be undertaken on already disturbed grounds (Informal Settlement).

5. How will the activity impact the natural and cultural environment?

- It is unlikely that the proposed development will have significant impact on the natural environment as the site is located on a transformed piece of land. If good civil engineering practices are implemented and abide by environmental legislations it is guaranteed that environmental and social issues can be minimized.

- A Heritage Notification of Intent to Develop will be submitted to confirm that the proposed development will have little impact on the cultural environment as there is no significant heritage sites close-by which was identified.
- Please refer to Section 13 of the report below, which provides a full description and assessment of the anticipated impacts of the proposed development on the surrounding natural and cultural environment. An environmental Management Programme Report is attached in **Appendix G** which will seeks to achieve a required end state and describes how activities that have or could have an adverse impact on the environment will be mitigated, controlled and monitored.

6. How will the activity impact on people's wellbeing (to noise, odours, sense of place etc.)?

- During the construction phase, the heavy machinery used on site will generate noise. Mitigation measures contained in the EMPr will moderate the impact of the noise to levels below what is deemed as disturbing. The proposed development will not emit disturbing odours. The sense of place of the surrounding area is unlikely to be influenced by the development.

7. Will the activity result in unacceptable opportunity costs (e.g. using the land for the next best purpose)?

- From the information provided above, we have not identified any development constraints on the site from a botanical or heritage perspective.

8. Will the activity result in unacceptable cumulative impacts?

- The activity will not result in significant cumulative impacts. In terms of cumulative impact, the changing of technology will result in an improvement to air quality in the region. An assessment of the cumulative impact of this facility is included in Section E of this report.

SECTION C: INFORMATION ON ASSESSMENT FACTORS

3. DESCRIPTION OF RECEIVING ENVIRONMENT

3.1 Physical Size of the Property and Activity

Mabuza Farm is an informal settlement located in Portion 8 of the Farm Buhrmanns Tafelkop 135 IT. The farm has an area of approximately fifty two (52) hectares in extent. The proposed development and associated activities will be implemented on the entire farm.

3.2 Site Access

Most erven gain access from the existing low-quality gravel roads that run-in gridiron formation throughout the settlement. See access map on **Figure 3.**

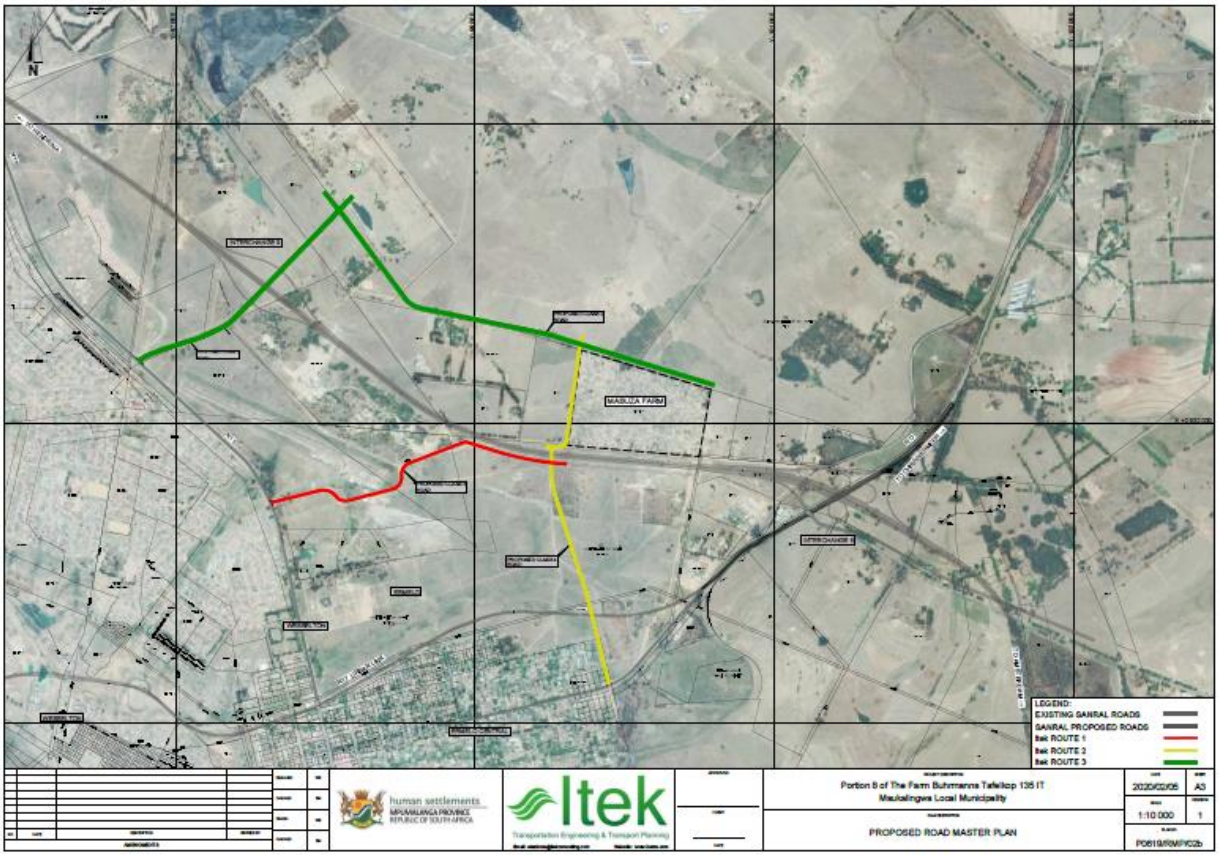

Figure 3: Access to proposed site (Itek Transportation Engineering and Transport Planning, 2020)

3.3 Existing Situation

Mabuza Farm Informal Settlement is mainly a residential area with very few business activities and there is no localised economic base. Most of the residents commute to work in nearby areas (Ermelo town, mines and other surrounding areas). All the ±700 households have no legal status. Mabuza Farm Informal Settlement is mainly surrounded by private land. In dealing with the future land issue for human settlement, the client's other alternative is to purchase land from private landowners in order to create a sustainable human settlement for all the residents of Mabuza Farm Informal Settlement. Mabuza Farm Informal settlement, due to its inherent "non-legal" status, has services and infrastructure below the "adequate" or minimum levels. Such services are both network and social infrastructure, such as water supply, sanitation, electricity, roads and drainage systems.

3.4 Climate and Rainfall

The proposed development falls under the central Mpumalanga climatic zone characterized by warm, rainy summers and dry winters with sharp frosts. Rainstorms are often violent (up to 80mm per day) with severe lightning and strong winds, sometimes accompanied by hail. The winter months are droughty with the combined rainfall in June, July and August making up only 3,9% of the annual total (734mm). The average daily maximum temperature in January (the hottest month) is 25,2°C and in July (the coldest month) is 16,7°C. Due to its position near the escarpment, the area is somewhat windier than is typical for the South - Eastern Mpumalanga Highveld, although the majority of winds are still light and their direction is controlled by topography (Msukaligwa LM Spatial Development Framework, 2010).

3.5 Geology

The proposed site is underlain predominantly by arenite and dolerite intrusions of the Karoo Supergroup. Other underlying rock types include quartz monzonite, granite and basalt. The central-western part of the study area is underlain by the Ermelo coal field, where the predominant rocks are sedimentary, i.e. sandstones, shales and siltstones of the Ecca Group that contains arenaceous strata of the coal-bearing Vryheid formation.

3.6 Vegetation and Biodiversity

Existing vegetation in the undeveloped areas of Msukaligwa Local Municipality consists predominantly of typical Highveld grasslands. Grasslands are dominated by a single layer of grasses and the amount of cover

depends on rainfall and the degree of grazing. Trees are absent, except in a few localized habitats and geophytes are often abundant. (Msukaligwa, Spatial Development Framework, 2010).

3.7 SOCIO-ECONOMIC ENVIRONMENT

According to information derived from the Socio Economic Profile report by the Provincial Department of Economic Development and Tourism, the unemployment rate for females and males are 31.4% and 18.1% respectively while youth is at 34.5% in 2016.

3.8 WASTE, EFFLUENT, EMISSION AND NOISE MANAGEMENT

3.8.1 DUST EMISSIONS

As a result of the construction of the proposed Integrated Sustainable Human Settlement on Portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT and transportation of materials during construction, there will be increased dust levels. However, this is expected to be within acceptable limits and measures to reduce dust will be contained in the EMPr attached in **Appendix G** and must be adhered to. Dust suppression must be used by dampening with water or spraying from a water bowser to control the amount of dust created and released into the atmosphere and working environment. Potable or treated water must not be used for dust suppression at all.

3.8.2 NOISE POLLUTION

Noise levels in the area will be increased during the construction phase of the development as a results of the operations of heavy machinery, by the use of construction equipment and the movement of large trucks transporting concrete, rock, sand and gravel to site. However, measures to reduce noise will be contained in the EMPr; attached in **Appendix G** and relevant legislation guideline levels as per SANS 10103 regarding noise levels must be adhered to.

3.8.3 SOLID WASTE

The different types of waste which will be generated during the construction activities may include:

- Solid waste – e.g. Plastics, metal, wood, stone, construction rubble, concrete, and general domestic waste.
- Chemical waste – e.g. Petrochemicals, resins, paints and herbicides.

- Sewage and waste water.

The following are recommendations made to reduce waste on site:

- ✓ No on-site burning, burying or dumping of any waste materials, litter or refuse shall occur.
- ✓ The Contractor shall provide vermin and weatherproof bins with lids of sufficient number and capacity to store the solid waste produced on a daily basis. The lids shall be kept firmly on the bins at all times.
- ✓ Bins shall not be allowed to become overfull and shall be emptied at least once a day.
- ✓ The waste from bins may be temporarily stored on Site in a central waste area that is weatherproof and scavenger-proof, and which the ECO has approved.
- ✓ Recyclable waste shall be disposed of into separate skips/bins and removed off-site for recycling.
- ✓ All solid waste shall be disposed of off-site at an approved landfill Site. The Contractor shall supply the ECO with the appropriate disposal certificates.
- ✓ The Contractor must facilitate the re-use of cleared trees and bush (e.g. by allowing controlled wood cutting and removal of wood). The Contractor shall submit a solid waste management plan as part of the Pollution Control Method Statement to the ECO.

4. FINDINGS OF SPECIALISTS

An Archaeologist and ecologist were consulted during the completion of this section. The following are the summary of findings and the reports are attached as **Appendix D**.

4.1 Biodiversity Sensitivity Analysis

4.1.1. Vegetation

South Africa is divided up into nine major Biomes. The study area and the surrounding area are situated within the Grassland Biome.

The Grassland Biome can be naturally subdivided into dry and moist grassland regions. Grassland veldtypes with a rainfall of 600mm+ per annum tend to be dominated by sour, andropogonoid grasses. While in veldtypes with an average rainfall of below 600mm per annum, the sweet chloridoid grasses tend to be more common. Dry and moist grassland types are divided primarily on the basis of rainfall, with 500-700mm being the broad boundary. Historically, such as with the classification of veld types by JPH Acocks (1952) and AB

Low & AG Rebelo (1998), these grasslands have been divided into sweet grasses (sweetveld) and sour grasses (sourveld) based primarily on agriculutral or grazzing criteria. In high rainfall areas (moist grasslands) sour grasses tend to dominate, while in low rainfall areas the sweet grasses (which are more palatable for livestock) tend to dominante. Grasslands (like any other vegetation type) are also influenced and shaped by numerous environmental factors such as temperature, soils and altitude.

Mucina and Rutherford (eds) (2006) subdivided the Grassland Biome into four main bioregions. Namely, Dry Highveld Grasslands; Drakensberg Grasslands; Meisic Highveld Grasslands; and Sub-Escarpment Grasslands. These subdivisions of the Grassland Biome are based on gradients of altitude (height above sea-level) and moisture (rainfall). Altitude has a strong influence on climatic variables and an increase in altitude usually corresponds with an increase in rainfall and a decrease in temperature. Grassland vegetation types are dominated by a single, lower layer of grasses, with the occurrence of a middle layer of shrub and upper layer of trees being rare to absent, except in a few localised habitats such as koppies (rocky outcrops) and rocky ridges.

The study area occurs within the Mesic Highveld Grassland Bioregion of the Grassland Biome of South Africa and within the original extent of the vegetation unit (veldtype) known as Eastern Highveld Grassland.

Table 11: Vegetation hierarchy of the study site

Category Description	Classification
Biome	Grassland
Bioregion	Mesic Highveld Grassland
Vegetation Types	Eastern Highveld Grassland

Eastern Highveld Grassland is characterized by slightly to moderately undulating plains, including some low hills and pan depressions. The vegetation is short dense grassland dominated by the usual highveld grass composition (*Aristida*, *Digitaria*, *Eragrostis*, *Themeda*, *Tristachya* etc.) with small, scattered rocky outcrops with wiry, sour grasses and some woody species (*Acacia caffra*, *Celtis africana*, *Diospyros lycioides* subsp *lycioides*, *Parinari capensis*, *Protea caffra*, *Protea welwitschii* and *Searsia magalismontanum*).

The vegetation of the study site is mostly transformed and degraded grassveld. This is due to historical cultivation of the grasslands and presently due to informal settlements in the area. No pristine grassland is present in the study area.

Eastern Highveld Grassland is a threatened ecosystem (veldtype) and is rated as vulnerable (VU).

4.1.2. Aquatic

There are no rivers within the study area, including small seasonal streams or distinctive drainage lines. There is however a few scattered small wetlands in the area, including NFEPA delineated wetlands. There is a large seep wetland area in the northwest of the study site (Figure 4).

Figure 4: Watercourses

4.1.3. Drainage Areas

South Africa is geographically divided up into a number of naturally occurring Primary Drainage Areas (PDAs) and Quaternary Drainage Areas (QDAs). The different areas are demarcated into Water Management Areas (WMAs) and fall under the authority of different Catchment Management Agencies (CMAs). Until recently there were 19 WMAs and 9 CMAs. As of September 2016, these were revised and there are now officially only 9 WMAs, which correspond directly in demarcation to the 9 CMAs (Government Gazette, 16 September 2016. No.1056, pg. 169-172).

The study area is situated within the Primary Drainage Area (PDA) of C and the Quaternary Drainage Area (QDA) of C11F. The study area is within the Vaal Water Management Area (WMA 1) and under the jurisdiction of the Vaal Catchment Management Agency (CMA 1).

The table below gives a summary of the catchment areas and management areas for the study site (Table 12). In terms of water ecology the study area is situated.

Table 12**: Summary of Catchment areas for the study site**

Level	Category
Primary Drainage Area (PDA)	C
Quaternary Drainage Area (QDA)	C11F
Water Management Area (WMA) – Previous / Old	Upper Vaal
Water Management Area (WMA) – New (as of Sept. 2016)	Vaal (WMA 5)
Sub-Water Management Area	Upstream Vaal Dam
Catchment Management Agency (CMA)	Vaal (CMA 5)
Priority Quaternary Catchment	No
Wetland Vegetation Region	Mesic Highveld Grasslands

4.1.4. Priority Areas

Priority areas include formal and informal protected areas (nature reserves); important bird areas (IBAs); RAMSAR sites; National fresh water ecosystem priority areas (NFEPA) and National protected areas expansion strategy (NPAES) areas. The study site is situated only within the Important Bird Area (IBA) of Amersfoort-Bethal-Carolina (Figure 5) and west of the Important Bird Area (IBA) of Chrissie Pans. The IBA in which the study area falls is especially important for grassland birds, including many storks and cranes that are endangered.

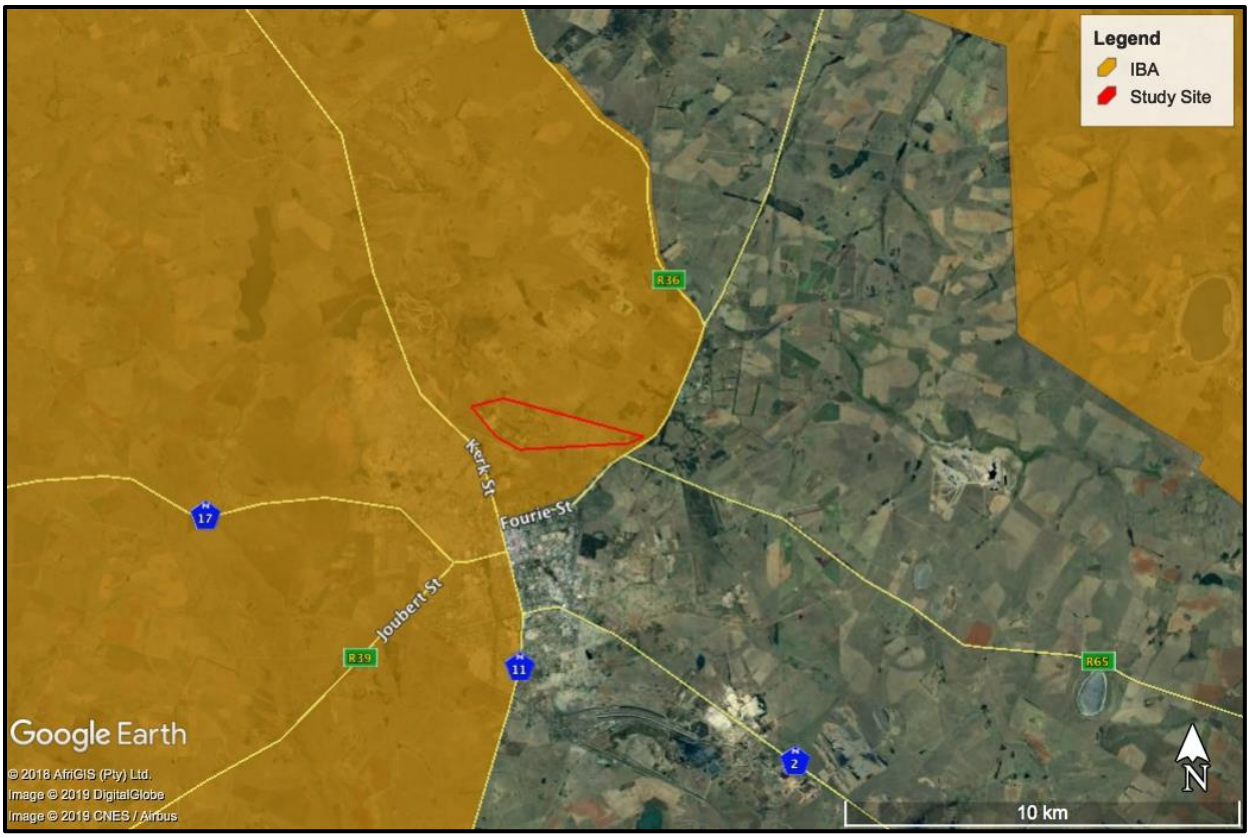

Figure 5: Priority areas

4.1.5. Mpumalanga Biodiversity Plan (2014)

According to the Mpumalanga Biodiversity Plan (2014), most of the study site is situated within a CBA (Irreplaceable), but not within any Ecological Support Areas (ESA). However, the entire area is not pristine grassland and has been farmed (ploughed and cultivated) for many years and cannot therefore be viewed as a CBA (but an ESA at most). The specialist disputes the CBA classification of the study area.

4.1.6. Sensitivity of the study site

Most of the study site consists for transformed and degraded grassland areas. The grasslands and open farm areas are not sensitive in terms of natural ecology and biodiversity (low sensitivity). The wetlands and farm dams in the study area are not pristine but all watercourses, by default, should be view as sensitive. This is especially true of freshwater wetlands that are under serious threat. The wetlands and farm dams therefore have a rated sensitivity of high. See map below (Figure 6).

At present a buffer zone of 50m around the wetlands is recommended and a buffer of 30m around the farm dams. This recommendation can be adjusted after a full site investigation has been conducted of the area.

Figure 6**: Sensitivity Map**

4.2 Archeology and Paleontology

The site is located in an area generally known for occurrence of Late Iron Age Archaeological Sites. The Paleontological sensitivity may also indicate that the area is sensitive and therefore a Paleontological Impact study is imperative. The project area is also known for occurrence of unmarked graves.

The main cause of impacts to archaeological and heritage sites are direct, physical disturbance of the archaeological remains themselves and their contexts. It is important to note that the heritage and scientific potential of an archaeological site is highly dependent on its geological and spatial context. This means that even though, for example a deep excavation may expose buried archaeological sites and artefacts, the artefacts are relatively meaningless once removed from their original position. The severe impacts are likely to occur during clearance, digging for foundations, access roads, pipelines and indirect impacts may occur during movement of construction vehicles. The excavation for foundations and fence line posts will result in the relocation or destruction of all existing surface heritage material. Similarly, the clearing of access roads will impact material that lies buried in the surface sand. Since heritage sites, including archaeological sites, are non-renewable, it is important that they are identified, and their significance assessed prior to

development. It is important to note, that due to the localised nature of archaeological resources, that individual archaeological sites could be missed during the survey, although the probability of this is low to medium at this site. Further, archaeological sites and unmarked graves may be buried beneath the surface and may only be exposed during clearance and construction.

The purpose of the AIA/HIA is to assess the sensitivity of the development area in terms of archaeology and to avoid or reduce the potential impacts of the proposed development site by means of mitigation measures. The study concludes that the impacts will be negligible since the site has previously been cleared for access roads, pipelines and water reservoirs. The following section presents results of the field survey.

Although the proposed development site is disturbed, it is the considered opinion of the author that a Phase 1 Archaeological Impact study and a Palaentological Impact Study be conducted in accordance with Section 38 (1) & (3) of the National Heritage Resources Act 25 of 1999. The Phase 1 archaeological impact study will provide a detailed archaeological background of the site, previous archaeological studies conducted in the area, heritage management plan, heritage assessment and a chance finds procedure.

These will ensure compliance with the said legislation and protection of non-renewable heritage resources that may be salvaged from the already disturbed landscape. In addition, the proposed development site exceeds the threshold for conducting a Phase 1 Archaeological and Heritage Study.

SECTION D: PUBLIC PARTICIPATION PROCESS

5. PUBLIC PARTICIPATION PROCESS

It is stated in the Environmental Impact Assessment Regulations (2017) as amended, under the National Environmental Management Act, 1998 (Act No. 107 of 1998) as amended; that a public participation process must be conducted as part of the EIA process. Public participation is currently being carried out in accordance with Section 24J of the National Environmental Management Act as amended in the EIA regulations, 2017.

The primary objectives of the public participation process are to:

- Inform and notify potentially Interested and Affected Parties (I&APs) of the proposed application (explain steps that were taken to achieve this);
- Initiate or promote meaningful and timeous participation of I&APs by providing proof that notice boards, advertisements and notices notifying potentially interested and affected parties of the proposed application have been displayed, placed or given;
- Maintain a list of all persons, organisations and organs of state that were registered as interested and affected parties in relation to the application;
- Identify issues and concerns of key stakeholders and I&APs with regards to the application for the proposed project;
- Provide a summary of the issues raised by interested and affected parties, the date of receipt of and the response of the EAP to those issues; and
- Provide responses to I&AP's queries.

5.1. PROCESS FOLLOWED

This serves as a summary of the Public Participation Process (PPP) followed for the proposed formalization of Mabuza Informal Settlement into establishment on an Integrated Sustainable Human Settlement on portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT within the Msukaligwa Local Municipality, Mpumalanga Province. The PPP commenced in August 2019 when Nkolele project and OURA (Pty) Ltd team conducted a site visit. Site notices were erected on site on the 20th of March 2020 within the project area. Background Information document (BID) are being distributed to different interested and affected parties (I&APs) in the Ermelo area.

A newspaper advert will be placed in the Mpumalanga news local newspaper then followed by a comment period which will be open for I&APs to raise their issues and concerns regarding the proposed activity. The Public Participation meeting will be arranged with community leader and meeting minutes will be recorded and documented.

A draft Section 24G Report and Environmental Management Programme is compiled, and will be distributed to the relevant authorities for a 30 day comment period. I&AP's will be afforded the opportunity to raise any further issues and concerns, until the finalisation of the document for submission to the Mpumalanga Department of Agriculture, Rural Development, Land and Environmental Affairs (DARDLEA).

5.2. PUBLIC PARTICIPATION AS PART OF ENVIRONMENTAL ASSESSMENT DONE IN TERMS OF SECTION 24G

5.2.1. PUBLIC NOTICES/ SITE NOTICES

Public notices and site notes were erected on site and at areas frequently used by the public on the 20th of March 2020. See **Figure 7** for photographs of site erected notices

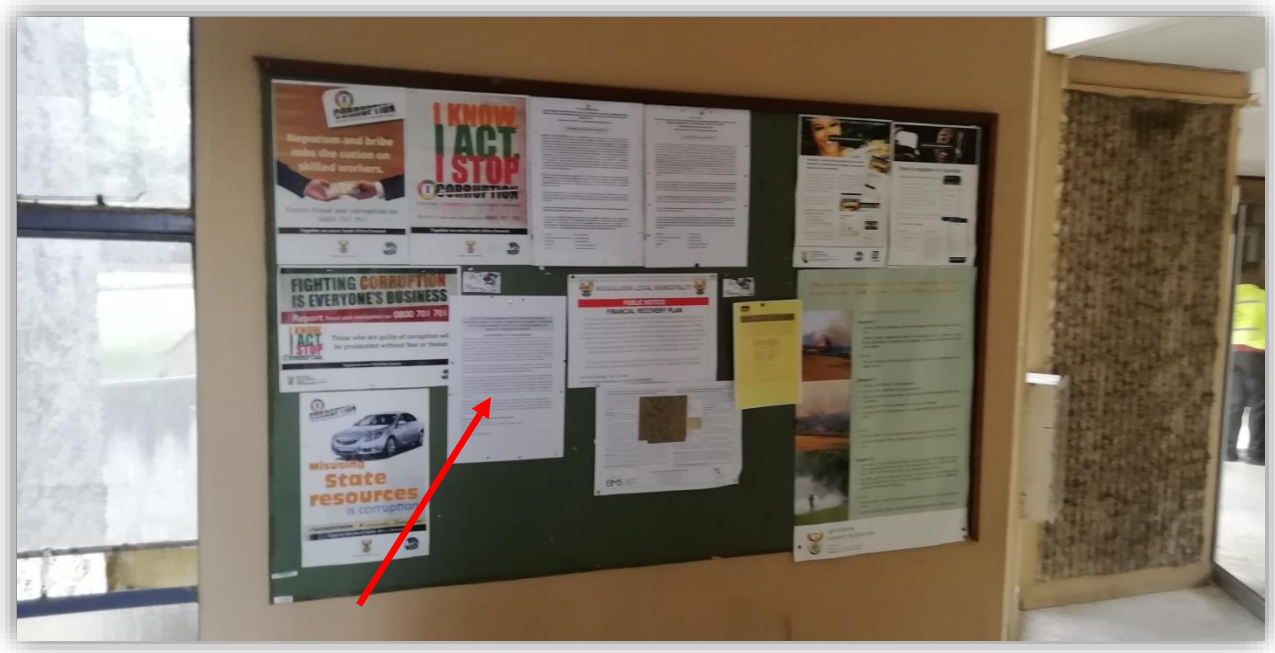

Figure 7: Photographs of site notices

5.2.2. WRITTEN NOTICES AND BACKGROUND INFORMATION DOCUMENT (BID)

A background information document with an invitation register to I&APs, to submit comments as per attached comment sheet was distributed as follows:

- Posted to I&AP's database (which includes neighboring properties);
- Placed at locations frequently used by the public.

5.2.3. ADVERTISEMENTS

A newspaper advertisements regarding inter alia the proposed project scope of works, location as well as details of EAP will be placed in the Mpumalanga News local newspaper.

5.2.4. PUBLIC MEETING

Public meetings will be arranged with community leaders and conducted on a particular day agreed by all parties as suitable.

5.2.5. DRAFT REPORT REVIEW

The draft Environmental Impact Report will be made available for review for a period of 30 days and hard copies will be placed at strategic area' so that it can be accessible to I&APs.

As it stands no comments were received and compiled into an Issues Trail with regards to the draft assessment report issued for comments.

Issues Trail

An Issues Trial, summarizing the objections and comments from the PPP has been provided in the PPP section (**Appendix E**) – Issues Trial.

5.2.6. ONGOING I&AP / STAKEHOLDER COMMUNICATION

The project Team has ongoing communication with I&AP's to ensure the continued involvement of all stakeholders and I&AP throughout the EIA process and beyond.

SECTION E: IMPACT ASSESSMENT AND MITIGATION

6. IMPACT ASSESSMENT AND MITIGATION

6.1. ENVIRONMENTAL IMPACT

An impact or environmental impact is the change to the environment, whether desirable or undesirable, that will result from the effect of a Construction activity. An impact may be the direct or indirect consequence of a Construction activity. A description of the potential impact or consequences of an aspect of the development on a specified component of the biophysical, social or economic environment within a defined time and space.

6.2. IMPACT SIGNIFICANCE ASSESSMENT

An impact is defined where an interaction occurs between a project activity and an environmental receptor. The EIA process ranks impacts according to their "significance" determined by considering project activity "event magnitude" and "receptor sensitivity".

Determining event magnitude requires the identification and quantification (as far as practical) of the sources of potential environmental and socio-economic effects from routine and non-routine project activities. Determining receptor environmental sensitivity requires an understanding of the biophysical environment.

6.3. EXISTING CONDITIONS

In order to identify potential impacts to receptors, an understanding of the existing conditions was established prior to execution of project activities. The project site visit and scanning exercise determined that the project will likely result in impacts on the following receptor groups:

- Biological/Ecological;
- Physical Receptor/Feature;
- Soil and Surface Water Quality; and
- Socio-Economic/Human.

A number of environmental and public participation have been undertaken within the project area to determine the environmental and social impact.

The sections below set out the methodology for both environmental and socio-economic impact assessment.

6.3.1. IMPACT EXTENT

The Extent of the impact generally expresses the spatial influence of the effects produced by a disturbance to a single or number of environmental systems or components.

Table 13: Key to Extent of Impact

Extent of Impact	
Site	Effect limited to this site and its immediate surroundings
Surrounding Area	Effects of an impact experienced beyond the project site but within a 2km radius of the site.
Local	Effect limited to within 3 –5 km of the site
Regional	Effect will have an impact on a regional scale
Provincial/National	Effects of an impact experienced within a large geographic area beyond a 200km radius of the site.

6.3.2. IMPACT DURATION

The Duration of the impact describes the period of time during which the environmental systems or components affected are changed by the impact.

Table 14: Key to Duration of Impact

Duration of Impact	
Short	Effects lasts for a period 0 to 5 years
Medium	Effect continues for a period between 5 and 10 years
Long	Effect will cease after the operational life of the activity either because of natural process or by human intervention
Permanent	Where 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

6.3.3. IMPACT INTENSITY

Table 15: Key to Intensity of Impact

Intensity of Impact	
Low	The impact affects the environment in such a way that natural, cultural and social functions and processes are not affected.
Medium	Where the affected environment is altered but natural, cultural and social functions and processes continue albeit in a modified way
High	Where natural, cultural or social functions or processes are altered to the extent that it will temporarily or permanently cease

6.3.4. IMPACT PROBABILITY

The probability of the impact describes the likelihood of the impact actually occurring.

Table 16: Key to Probability

Rating	Description
1	Practically Impossible
2	Unlikely
3	Could Happen
4	Very Likely
5	It's going to happen/ has occurred

6.3.5. IMPACT SIGNIFICANCE

Significance rating (importance) of the associated impacts embraces the notion of extent and magnitude, but does not always clearly define these since their importance in the rating scale is very relative. For example, if 60 ha of a grassland type are destroyed the impact would be VERY HIGH if only 100 ha of that grassland type were known. The impact would be VERY LOW if the grassland type was common.

Table 17: Key to Significance of Impact

Significance of Impact

Low	Where the impact will have a relatively small effect and will not have an influence on the decision
Medium	Where the impact can have an influence on the environment and the decision and should be mitigated
High	Where the impact definitely has an impact on the environment and the decision regardless of any possible mitigation

6.3.6. IMPACT CONFIDENCE LEVEL

Table 18: Key to Confidence Levels

Confidence	
Low	It is uncertain whether the impact will occur
Medium	It is likely that the impact will occur
High	It is relatively certain that the impact will occur

6.3.7. IMPACT REVERSIBILITY

Table 19: Key to Impact Reversibility

Reversibility	
Low	Where the impact is difficult or takes more than 10 years to reversed
Medium	Where the impact can be reversed between 5 to 10 years
High	Where impact can be reversed immediately or between 0-5 years

6.3.8. DEGREE OF CERTAINTY

As with all studies it is not possible to be 100% certain of all facts, and for this reason a standard “degree of certainty” scale is used as discussed. The level of detail for specialist studies is determined according to the degree of certainty required for decision-making. The impacts are discussed in terms of affected parties or environmental components.

Table 20: Degree to which Impacts can cause Irreplaceable Loss of Resources

Irreplaceable

Low	The resource is still available, it can be replaced and can be used for other activities
Medium	The resource is still available in altered way, it will take some time to be replaced and can still be used for other activities
High	The resource is no longer available, it cannot be replaced and can only be used for specific activities

6.3.9. MITIGATION LEVEL

Table 21: Key to Mitigation Levels

Mitigation	
Low	Where the impact is difficult or takes more than 10 years to mitigated
Medium	Where the impact can be mitigated between 5 to 10 years
High	Where impact can be mitigated immediately or between 0-5 years

6.3.10. QUANTITATIVE DESCRIPTION OF IMPACTS

To allow for impacts to be described in a quantitative manner in addition to the qualitative description given above, a rating scale of between 1 and 5 was used for each of the assessment criteria. Thus the total value of the impact is described as the function of significance, spatial and temporal scale as described below.

$$\boldsymbol{Impact\ Risk} = Significance + Spatial + Temporal\ /3\ x\ Probability/5$$

An example of how this rating scale is applied is shown in **Table 10**.

Table 22: Example of Rating Scale

Impact	**Significance**	**Spatial Scale**	**Temporal Scale**	**Probability**	**Rating**
	Low	**Local**	**Medium Term**	**Could Happen**	
Impact to vegetation	2	3	3	3	1.6

Note: The significance, spatial and temporal scales are added to give a total of 8, that is divided by 3 to give a criteria rating of 2, 67. The probability (3) is divided by 5 to give a probability rating of 0, 6. The criteria rating of 2, 67 is then multiplied by the probability rating (0, 6) to give the final rating of 1, 6.

Table 23: Impact Risk Classes

Rating	**Impact Class**	**Description**

0	0	None
0.1 – 1.0	1	Very Low
1.1 – 2.0	2	Low
2.1 – 3.0	3	Moderate
3.1 – 4.0	4	High
4.1 – 5.0	5	Very High

In the tables below, acronyms have been used. The explanation of these acronyms follows below:

S - Significance

E - Extent (spatial scale)

D - Duration

P - Probability

C - Certainty

RR - Risk rating (quantitative)

II - Initial Impact

RI - Residual Impact

Please see Appendix F for full Impact Assessment report.

SECTION F: PROPOSED MONITORING, CONTROL AND AUDITING

7. PROPOSED MONITORING, CONTROL AND AUDITING

The National Environmental Management Act 107 of 1998 (NEMA) requires that an EMPr be submitted where an environmental impact assessment must be utilised as the basis for a decision on an application for environmental authorisation. An EMPr has been compiled for this application and has been attached in **Appendix G** of this report. This EMPr is fundamental to the EIA process and must ensure that commitments given at a project's planning and assessment stage are effectively implemented through the construction and operation stage. The following monitoring and auditing strategies are recommended for the proposed Integrated Sustainable Human Settlement on portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT, entailing the township establishment process within the Msukaligwa Local Municipality, Mpumalanga Province. An experienced and independent Environmental Control Officer (ECO) must be appointed by the proponent prior to commencement of any construction activities to ensure that the environmental conditions are implemented and that compliance with the provisions of the EMPr attached in **Appendix G** are implemented by the Engineer and appointed Contractor.

The Project Owner / Project Manager shall:

- Be fully conversant with the EMPr for the project;
- Ensure that the Project Engineer and the Contractor/Operator are aware of all specifications, legal constraints, standards and procedures pertaining to the project specifically with regard to the environment;
- Ensure that all stipulations within the EMPr are communicated and adhered to by the Project Engineer and the Contractor/Operator;
- Monitor the implementation of the EMPr throughout the project by means of regular site visits and meetings; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMPr.

The Project Engineer shall:

- Be fully conversant with the EMPr;

- Ensure compliance with the EMPr;
- Have overall responsibility for the implementation of the EMPr;
- Liaise with the Project Manager and Contractor/Operator on matters concerning the environment;
- Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution of the site;
- Implement remedial measures in the event of pollution incidents or environmental impacts;
- Monitor and verify that environmental impacts are kept to a minimum;
- Review and approve construction methods where necessary; and
- Order the removal of any person(s) and/or equipment in contravention of the specifications of the EMPr.

The Contractor shall:

- Be fully conversant with the EMPr;
- Ensure compliance with the EMPr;
- Ensure that all the environmental specifications contained within this EMPr are adhered to at the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and
- Confine activities to the demarcated construction site.

The above responsibilities listed for the Contractor will also apply to any appointed sub-consultants.

The Environmental Control Officer (ECO) shall:

- Be fully conversant with the EMPr;
- Be fully conversant with all environmental legislation and ensure compliance;
- Ensure that all the environmental specifications contained within this EMPr are adhered to at the site;
- Regularly liaise with the Site Manager on matters relating to the environment; and
- Compile monthly reports as to the progress of the construction phases and report to all parties involved (Site Manager, Project Proponent).

SECTION G: ENVIRONMENTAL IMPACT STATEMENT

8. ENVIRONMENTAL IMPACT STATEMENT

THE TOWNSHIP ESTABLISHMENT

The proposed development will have minimal environmental impact and also heritage impacts on the proposed site were the township establishment will be constructed. The area is already an existing informal settlement with limited services like ablutions and water which therefore pose damage to the environment by inadequate disposal of waste. Though there are no sensitive areas present within the site, it is crucial that it is understood that the area is recognised for wetlands and channels which play a crucial role in the biodiversity.

The ecological sensitivity of the study area is determined by combining the sensitivity analyses of both the floral and faunal components. The overall significance of positive socioeconomic and environmental impacts is beneficial as it should improve the livelihood of the local community and the municipality as a whole.

Temporary job opportunities for skilled and unskilled workers as well as skills development is expected during the construction phase. There will also be an eradication of poverty.

NO-GO ALTERNATIVE

Also referred to as the 'Do-nothing' option and it refers to the situation wherein the proponent will not construct the houses. In this scenario the potential positive and negative environmental and social impacts as described in this report will not occur and the status quo will be maintained. However should the project not proceed, the river-crossing difficulties will remain the same for local community including school children especially during rainy seasons. Acceptability to society: the proposed project will offer a number of tangible benefits to society including ease unemployment and improved pedestrian safety and access.

SECTION H: CONCLUSIONS AND EAP'S RECOMMENDATION

9. CONCLUSIONS AND RECOMMENDATIONS

The proposed Integrated Sustainable Human Settlement on portion 8 (remaining extent) of the farm Buhrmanns Tafelkop 135 IT, entailing the township establishment process within the Msukaligwa Local Municipality, Mpumalanga

Province will have environmental impact which are manageable through good engineering practices and following all environmental recommendations. But the following mitigations are strongly recommended:

- Be fully conversant with the EMPr;
- Control and monitor where construction materials are stored to avoid incidents;
- Locals should also be informed of dangers of children playing with construction materials;
- Prevent actions that will harm or may cause harm to the environment, and take steps to prevent pollution of the site;
- Implement remedial measures in the event of pollution incidents or environmental impacts;
- Monitor and verify that environmental impacts are kept to a minimum; and
- Review and approve construction methods where necessary.

Although all foreseeable actions and potential mitigations or management actions are contained in the EMPr, therefore the document should be considered as a day-to-day management Tool. The EMPr thus sets out the environmental standards that are required to minimise the negative impacts and maximize the positive benefits of the local community. An EMPr is a “live document” and its continuous review and correct management will definitely result to the successful construction of the proposed development.

All attempts should be made to have this EMPr available, as part of any tender documentation, so that the contractors are made aware of the potential cost and timing implications needed to fulfill the implementation of the EMPr.

DECLARATIONS

THE INDEPENDENT ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

I ....., on behalf of OURA Solutions, as the appointed independent environmental practitioner ("EAP") hereby declare that I:

- act/ed as the independent EAP in this application;
- regard the information contained in this report to be true and correct, and
- do not have and will not have any financial interest in the undertaking of the activity, other than remuneration for work performed in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- have and will not have no vested interest in the proposed activity proceeding;
- have disclosed, to the applicant and competent authority, any material information that have or may have the potential to influence the decision of the competent authority or the objectivity of any report, plan or document required in terms of the NEMA, the Environmental Impact Assessment Regulations, 2010 and any specific environmental management Act;
- am fully aware of and meet the responsibilities in terms of NEMA, the Environmental Impact Assessment Regulations, 2010 (specifically in terms of regulation 17 of GN No. R. 543) and any specific environmental management Act, and that failure to comply with these requirements may constitute and result in disqualification;
- have ensured that information containing all relevant facts in respect of the application was distributed or made available to interested and affected parties and the public and that participation by interested and affected parties was facilitated in such a manner that all interested and affected parties were provided with a reasonable opportunity to participate and to provide comments;
- have ensured that the comments of all interested and affected parties were considered, recorded and submitted to the competent authority in respect of the application;
- have kept a register of all interested and affected parties that participated in the public participation process;
- have provided the competent authority with access to all information at my disposal regarding the application, whether such information is favourable to the applicant or not; and
- am aware that a false declaration is an offence in terms of regulation 71 of GN No. R. 543.

Note: The terms of reference must be attached.

Signature of the Environmental Assessment Practitioner:

OURA Solutions

Name of company:

Date:

10. REFERENCE

- Mucina, L. & M.C. Rutherford (eds). 2006. The vegetation of South Africa, Lesotho and Swaziland. SANBI, Pretoria.
- Ollis, D.J, Snaddon, C.D, Job, N.M.& Mbona, M. 2013. Classification system for wetlands and other Aquatic ecosystems in South Africa. User Manual: Inland systems. SANBI. Biodiversity Series 22. Pretoria.
- Raimondo D., L. von Staden, W. Fonden, JE Victor, NA. Helme, RC. Turner, DA. Kamundi, PA. Manyama (eds). 2009. Red List of South African Plants. Strelitzia 25. SANBI. Pretoria.
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11. APPENDICES