FINAL ENVIRONMENTAL IMPACT ASSESSMENT REPORT

PROPOSED CLEARANCE OF INDIGENOUS VEGETATION ON 100 HECTARES OF PORTION 100 OF THE FARM NOOITGEDACHT 434 IP, FOR THE PURPOSE OF TOWNSHIP ESTABLISHMENT, CITY OF MATLOSANA, NORTHWEST PROVINCE

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DETAILS OF THE APPLICANT

Contact Person: Lehlohonolo Lepholletse (Project Manager)

Contact Person: TSR Nkhumise (Municipality Manager)

PROJECT CONSULTANT (TOWN PLANNERS APPOINTED BY HDA)

DITSAMAI INVESTMENTS AND PROJECTS

Contact Person: Stephen Matjila/ Songezo Ngqulana

SPECIALIST STUDIES AND CONSULTANTS

CONSULTANT COMPANY	SPECIALIST STUDY
GeoWAVE Consulting GEOWAVE CONSULTING	Biodiversity Assessment
CIVILCONSULT CIVILCONSULT CONSULTING ENGINEERS	Civil and Electrical Engineering Services
Davhana GEOTECH SOLUTIONS (PTY) LTD DAVHANA GEOTECHNICAL SOLUTIONS	Geotechnical Investigation
route 2 transport strategies ROUTE 2 TRANSPORT STRATEGIES	Traffic Impact Assessment
TSIMBA ARCHAEOLOGICAL FOOTPRINTS (PTY) LTD TSIMBA ARCHAEOLOGICAL FOOTPRINTS	Heritage Impact Assessment

FINAL ENVIRONMENTAL IMPACT REPORT DISTRIBUTED TO:

Department of Economic Development, Environment, Conservation and Tourism (DEDECT) Case Officer: Thembi Makuwa
Registered Interested and Affected Parties
Municipality Manager of City of Matlosana Local Municipality

GLOSSARY

Activity An action either planned or existing that may result in environmental impacts through pollution or resource use. For the purpose of this report, the terms 'activity' and 'development' are freely interchanged.

Alternatives Different means of meeting the general purpose and requirements of the activity, which may include site or location alternatives; alternatives to the type of activity being undertaken; the design or layout of the activity; the technology to be used in the activity and the operational aspects of the activity.

Applicant The project proponent or developer responsible for submitting an environmental application to the relevant environmental authority for environmental authorisation.

Biodiversity The diversity of animals, plants and other organisms found within and between ecosystems, habitats, and the ecological complexes.

Construction The building, erection or establishment of a facility, structure or infrastructure that is necessary for the undertaking of a listed or specified activity but excludes any modification, alteration or expansion of such a facility, structure or infrastructure and excluding the reconstruction of the same facility in the same location, with the same capacity and footprint.

Cumulative impact The impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area.

Decommissioning The demolition of a building, facility, structure or infrastructure.

Direct Impact Impacts that are caused directly by the activity and generally occur at the same time and at the same place of the activity. These impacts are usually associated with the construction, operation or maintenance of an activity and are generally quantifiable.

Ecosystem A dynamic system of plant, animal (including humans) and micro-organism communities and their non-living physical environment interacting as a functional unit. The basic structural unit of the biosphere, ecosystems are characterised by interdependent interaction between the component species and their physical surroundings. Each ecosystem occupies a space in which macro-scale conditions and interactions are relatively homogenous.

Environment In terms of the National Environmental Management Act (NEMA) (No 107 of 1998) (as amended), "Environment" means the surroundings within which humans exist and that are made up of:

a) the land, water and atmosphere of the earth;

b) micro-organisms, plants and animal life;

c) any part or combination of (i) of (ii) and the interrelationships among and between them; and

d) the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and wellbeing.

Environmental Assessment The generic term for all forms of environmental assessment for projects, plans, programmes or policies and includes methodologies or tools such as environmental impact assessments, strategic environmental assessments and risk assessments.

Environmental Authorisation An authorisation issued by the competent authority in respect of a listed activity, or an activity which takes place within a sensitive environment. Environmental Assessment Practitioner (EAP) The individual responsible for planning, management and coordination of environmental impact assessments, strategic environmental assessments, environmental management programmes or any other appropriate environmental instrument introduced through the EIA Regulations.

Environmental Impact Change to the environment (biophysical, social and/ or economic), whether adverse or beneficial, wholly or partially, resulting from an organisation's activities, products or services.

Environmental Impact Assessment (EIA) means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application as defined in NEMA.

Environmental Issue A concern raised by a stakeholder, interested or affected parties about an existing or perceived environmental impact of an activity.

Environmental Management Ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental Management Programme (EMPr) A detailed plan of action prepared to ensure that recommendations for enhancing or ensuring positive impacts and limiting or preventing negative environmental impacts are implemented during the life cycle of a project. This EMPr focuses on the construction phase, operation (maintenance) phase and decommissioning phase of the proposed project.

Fatal Flaw Issue or conflict (real or perceived) that could result in developments being rejected or stopped. In the context of an environmental impact assessment a fatal flaw can be termed as an environmental issue that cannot be mitigated by any means

General Waste Household water, construction rubble, garden waste and certain dry industrial and commercial waste which does not pose an immediate threat to man or the environment.

Groundwater Water in the ground that is in the zone of saturation from which wells, springs, and groundwater run-off are supplied.

Hazardous Waste Waste that may cause ill health or increase mortality in humans, flora and fauna.

Hydrology The science encompassing the behaviour of water as it occurs in the atmosphere, on the surface of the ground, and underground.

Indirect Impacts Indirect or induced changes that may occur as a result of the activity. These types if impacts include all of the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Integrated Environmental Management A philosophy that prescribes a code of practice for ensuring that environmental considerations are fully integrated into all stages of the development and decision-making process. The IEM philosophy (and principles) is interpreted as applying to the planning, assessment, implementation and management of any proposal (project, plan, programme or policy) or activity - at local, national and international level – that has a potentially significant effect on the environment. Implementation of this philosophy relies on the selection and application of appropriate tools for a particular proposal or activity. These may include environmental assessment tools (such as strategic environmental assessment and risk assessment), environmental management tools (such as monitoring, auditing and reporting) and decision-making tools (such as multi-criteria decision support systems or advisory councils).

Interested and Affected Party (I&AP) Any person, group of persons or organisation interested in or affected by an activity; and any organ of state that may have jurisdiction over any aspect of the activity.

Mitigate The implementation of practical measures designed to avoid, reduce or remedy adverse impacts or enhance beneficial impacts of an action.

No-Go Option In this instance the proposed activity would not take place, and the resulting environmental effects from taking no action are compared with the effects of permitting the proposed activity to go forward.

Public Participation Process A process in which potential interested and affected parties are given an opportunity to comment on, or raise issues relevant to, specific matters.

Overburden Layers of soil and rock covering a coal seam. In surface mining operations, overburden is removed prior to mining using large equipment. When mining has been completed, it is either used to backfill the mined areas or is hauled to an external dumping and/or storage site.

Rehabilitation A measure aimed at reinstating an ecosystem to its original function and state (or as close as possible to its original function and state) following activities that have disrupted those functions.

Scoping The process of determining the spatial and temporal boundaries (i.e. extent) and key issues to be addresses in an environmental assessment. The main purpose of scoping is to focus the environmental assessment on a manageable number of important questions. Scoping should also ensure that only significant issues and reasonable alternatives are examined.

Sensitive Environments Any environment identified as being sensitive to the impacts of the development.

Significance Significance can be differentiated into impact magnitude and impact significance. Impact magnitude is the measurable change (i.e. magnitude, intensity, duration and likelihood). Impact significance is the value placed on the change by different affected parties (i.e. level of significance and acceptability). It is an anthropocentric concept, which makes use of value judgements and science-based criteria (i.e. biophysical, social and economic).

Stakeholder Engagement: The process of engagement between stakeholders (the proponent, authorities and I&APs) during the planning, assessment, implementation and/or management of activities.

Sustainable Development that meets the needs of current generations without hindering future generations from meeting their own needs.

Watercourse as defined in terms of the National Water Act (Act 36 of 1998).

Wetland In terms of the National Water Act (Act 36 of 1998) 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.

ACRONYMS

DEA	**Department of Environmental Affairs**
EAP	**Environmental Assessment Practitioner**
EIA	**Environmental Impact Assessment**
EIAR	**Environmental Impact Assessment Report**
EMF	**Environmental Management Framework**
EMPr	**Environmental Management Programme**
ESS	**Environmental Scoping Study**
ESR	**Environmental Scoping Report**
DEDECT	**Department of Economic Development, Environment, Conservation and Tourism**
I&AP	**Interested and Affected Party**
NEMA	**National Environmental Management Act**
SDF	**Spatial Development Framework**
CoMLM	**City of Matlosana Local Municipality**

1. INTRODUCTION

The Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality (CoMLM) proposes to establish Township and associated facilities and infrastructure on Portion 100 of the Farm Nooitgedacht 434 IP. The Farm are located adjacent south of the existing Township. The City of Matlosana Local Municipality is situated in North-West Province, within the jurisdiction of the Dr Kenneth Kaunda District Municipality.

The municipality was classified as a Category B Municipality by the Municipal Demarcation Board, in terms of section 4 of the Local Government Municipal Structures Act, 1998. The City of Matlosana is situated approximately 164 South West of Johannesburg, on the N12 highway and covers about 3 625km².

It is one of Council's strategic objectives to promote forthcoming initiatives from the N12 Treasure Corridor, to ensure local economic development and industrialization for Klerksdorp.

The City of Matlosana includes Klerksdorp, Jouberton, Alabama, Orkney, Kanana, Stilfontein, Khuma, Tigane and Hartbeesfontein and is the largest of all towns in the North-West province.

Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality is proposing low-income residential development within 100Ha area. The proposed development consisted of construction of houses and associated human settlement infrastructure, including roads and sanitation and water services infrastructure.

The afore-mentioned development is to also include the installation of UPVC pipelines for the transportation of water from the bulk reservoir into various parts of the community. In addition to this, it will include also internal reticulation for water and sewage.

Section 12(1) of Government Notice No. R982 dated 4 December 2014 stipulates that: "A proponent or applicant must appoint an EAP at own cost to manage the application". Watercube Services has been appointed by Ditsamai Projects and Investments on behalf of City of Matlosana Local Municipality and Housing Development Agency, as the independent consultants, to conduct the Environmental Impact Assessment (EIA) in terms of NEMA, as amended, and the EIA Regulations, 2014, for the proposed Township on Portion 100 of the Farm Nooitgedacht 434 IP.

Details of the Applicant

Housing Development Agency

Contact Person: Lehlohonolo Lepholletse

Postal Address

P. O. Box 3209

HOUGHTON

JOHANNESBURG

2041

Purpose of Report

This report represents the Final Environmental Impact Assessment Report (EIAR) and has been prepared in accordance with the EIA Regulations published in Government Notice No. R 982. These regulations fall under Section 24(5) read with Section 44 of the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA).

The NEMA Section 24(5) stipulates that" listed activities" (i.e. those activities that have been recognised as having a detrimental effect on the environment) require environmental authorisation from the competent authority.

2. ENVIRONMENTAL IMPACT ASSESSMENT PROCESS

The Environmental Impact Assessment (EIA) process is controlled through Regulations published under Government Notice No. R. 983, R. 984 and R. 985 and associated guidelines promulgated in terms of Chapter 5 of the National Environmental Management Act (Act 107 of 1998).

Three phases in the EIA process are typically recognized as follows:

- Application Phase; (Completed)
- Scoping Phase; (Completed)
- EIA Phase (the current process)

Application Phase

The Application Phase consists of completing the appropriate application form by the EAP and the proponent together with Project Plan and Public Participation Plan and the subsequent submission and registration of the project with the competent authority. An application form was completed and submitted to the Department of Economic Development, Environment and Tourism. The application for Environmental Authorisation has been accepted and registered with Reference Number: NWP/EIA/82/2022.

Details of Case Officer handling application

Name: Thembekile Makuwa

Department of Economic Development, Environment and Tourism (DEDECT)

114 Chris Hani Street

POTCHEFSTROOM, 2520

Tel: 018 299 6583

E-mail: TMakuwa@nwpg.gov.za

Scoping Phase

The Scoping Phase aimed to identify the key environmental issues associated with the project, in part through public consultation; consider project alternatives; and provide focus for the EIA Phase. During the Scoping Phase, as per Regulation, a draft Scoping Report was compiled and subjected to 30-day comment period by Interested and Affected Parties (I&APs). Thereafter, the draft Scoping Report was finalised into the final Scoping Report that was submitted to Department of Economic Development, Environment and Tourism.

An acknowledgement and acceptance of the final Scoping Report was received.

EIA Phase

The EIA phase determines the significance of the impact of the proposed activity on the surrounding environment. During the EIA phase, an Environmental Impact Assessment Report (EIAR) is produced by Watercube Services and submitted to Department of Economic Development, Environment and Tourism. The Final EIAR (this report) provides an assessment of all the identified key issues and associated impacts from the Scoping Phase as well as a description of appropriate mitigation measures. All environmental impacts are assessed both before and after mitigation to determine:

- The significance of the impact despite mitigation; and
- The effectiveness of the proposed mitigation measures.

As in the Scoping Phase the public participation process continues to ensure that all (I&APs) are informed of the proposed activity and, provided an opportunity to comment.

Environmental Impact Assessment Report

Objectives of the EIA phase

As per the EIR Regulations, 2014, the objective of the environmental impact assessment process is to, through a consultative process-

- determine the policy and legislative context within which the activity is located and document how the proposed activity complies with and responds to the policy and legislative context;
- describe the need and desirability of the proposed activity, including the need and desirability of the activity in the context of the preferred location; identify the location of the development footprint within the preferred site based on an impact and risk assessment process inclusive of cumulative impacts and a ranking process of all the identified development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects of the environment;
- identify the most ideal location for the activity within the preferred site based on the lowest level of environmental sensitivity identified during the assessment;
- identify, assess, and rank the impacts the activity will impose on the preferred location through the life of the activity;
- identify suitable measures to avoid, manage or mitigate identified impacts; and identify residual risks that need to be managed and monitored.
- determine the--
    I. nature, significance, consequence, extent, duration and probability of the impacts occurring to inform identified preferred alternatives; and
    II. degree to which these impacts- can be reversed; may cause irreplaceable loss of resources, and can be avoided, managed or mitigated;

Content of the Environmental Impact Assessment Report as prescribed in the EIA Regulations, 4 December 2014

- Details and expertise of the Environmental Assessment Practitioner (EAP) undertaking the EIA
- A description of the legislation and guidelines applicable to the proposed activity;
- 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

(iii) the coordinates of the boundary of the property or properties

- A plan which locates the proposed activity or activities applied for as well as the associated
- A description of the scope of the proposed activity, including:

  (i) all listed and specified activities triggered and being applied for

  (ii) a description of the associated structures and infrastructure related to the development;
- A description of the policy and legislative context within which the development is located and an explanation of how the proposed development complies with and responds to the legislation and policy context;
- 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;
- a motivation for the preferred development footprint within the approved site;
- full description of the process followed to reach the proposed development footprint within the approved site, including:

  (i) details of the development footprint alternatives considered;

  (ii) details of the public participation process undertaken in terms of regulation 41 of the Regulations, including copies of the supporting documents and inputs;

  (iii) a 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;

  (iv) the environmental attributes associated with the development footprint alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;

(v) the impacts and risks identified including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impact:

(1) can be reversed;

(2) may cause irreplaceable loss of resources; and

(3) can be avoided, managed or mitigated;

(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks;

(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;

(viii) the possible mitigation measures that could be applied and level of residual risk;

(ix) if no alternative development locations for the activity were investigated, the motivation for not considering such; and

(x) a concluding statement indicating the preferred alternative development location within the approved site;

(xi) a full description of the process undertaken to identify, assess and rank the impacts the activity and associated structures and infrastructure will impose on the preferred location through the life of the activity, including:

(1) a description of all environmental issues and risks that were identified during the environmental impact assessment process; and

(2) an assessment of the significance of each issue and risk and an indication of the extent to which the issue and risk could be avoided or addressed by the adoption of mitigation measures;

(xii) an assessment of each identified potentially significant impact and risk, including

(1) cumulative impacts;

(2) the nature, significance and consequences of the impact and risk;

(3) the extent and duration of the impact and risk;

(4) the probability of the impact and risk occurring;

(5) the degree to which the impact and risk can be reversed;

(6) the degree to which the impact and risk may cause irreplaceable loss of resources; and

(7) the degree to which the impact and risk can be mitigated;

(xiii) where applicable, a summary of the findings and recommendations of any specialist report complying with Appendix 6 to these Regulations and an indication as to how these findings and recommendations have been included in the final assessment report;

(xiv) an environmental impact statement which contains

(1) a summary of the key findings of the environmental impact assessment:

(2) 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; and

(3) a summary of the positive and negative impacts and risks of the proposed activity and identified alternatives;

(xv) based on the assessment, and where applicable, recommendations from specialist reports, the recording of proposed impact management objectives, and the impact management outcomes for the development for inclusion in the EMPr as well as for inclusion as conditions of authorisation;

(xvi) the final proposed alternatives which respond to the impact management measures,

(xvii) avoidance, and mitigation measures identified through the assessment;

(xviii) 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

(xix) a description of any assumptions, uncertainties and gaps in knowledge which relate to the assessment and mitigation measures proposed;

(xx) 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;

(xxi) where the proposed activity does not include operational aspects, the period for which the environmental authorisation is required and the date on which the activity will be concluded and the post construction monitoring requirements finalised;

(xxii) an undertaking under oath or affirmation by the EAP in relation to:

(1) the correctness of the information provided in the reports;

(2) the inclusion of comments and inputs from stakeholders and I&APs;

(3) the inclusion of inputs and recommendations from the specialist reports where relevant; and

(4) any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties;

3. DETAILS OF THE ENVIRONMENTAL IMPACT ASSESSMENT PRACTITIONER

This chapter is intended to provide details on the organisation and the Environmental Assessment Practitioners (EAPs) that undertook the Scoping and EIA.

Table 1: Environmental Consulting Company and Environmental Assessment Practitioner Details

EAP: Watercube Services (Pty) Ltd	
35 Dave Herman Street	Tel: 071 729 4073
The Orchards	Fax: 086 608 2143
0182	E-mail:watercubeservices@gmail.com
Experience of the EAP Tebogo Molefe is an environmental scientist and has been involved in environmental management for the past 7 years working on South African including EIAs. His experience includes Basic Assessments, Environmental Impact Assessments, Environmental Management Plans, Environmental Auditing, Water Use Licence Applications and Stakeholder Engagement	

Other Specialist studies undertaken to support the EIA Report

- Biodiversity Assessment Study
- Geotechnical Impact Assessment Study
- Traffic Impact Assessment Study
- Civil and Electrical Engineering Service Study
- Heritage Impact Assessment Study

The findings of specialists relative to the abovementioned issues have informed the proposed development and have been incorporated into the body of this report. The specialists reports are appended as required.

4. LOCALITY PLAN INDICATING PROPOSED TOWNSHIP

Figure 1: Local Plan of the Proposed Township

The proposed development is located on the Portion 100 of the Farm Nooitgedacht 434 IP, City of Matlosana Local Municipality, North West Province.

The co-ordinates of the site are S 26° 55' 22.40206″ and E 26° 36' 58.7876″, S 26° 55' 22.24556″ and E 26° 36' 59.57658″, S 26° 55' 22.09872″ and E 26° 37' 3.68954″, S 26° 55' 21.92268″ and E 26° 37' 4.95401″

21-digit Surveyor General code of cadastral land parcel:

T	0	I	P	0	0	0	0	0	0	0	0	0	4	3	4	0	0	1	0	0

The proposed site is adjacent to informal settlements (Jouberton Extension 31) which extends over an area of approximately 100 Hectare (Ha) and is located on Housing Development Agency and municipality owned property.

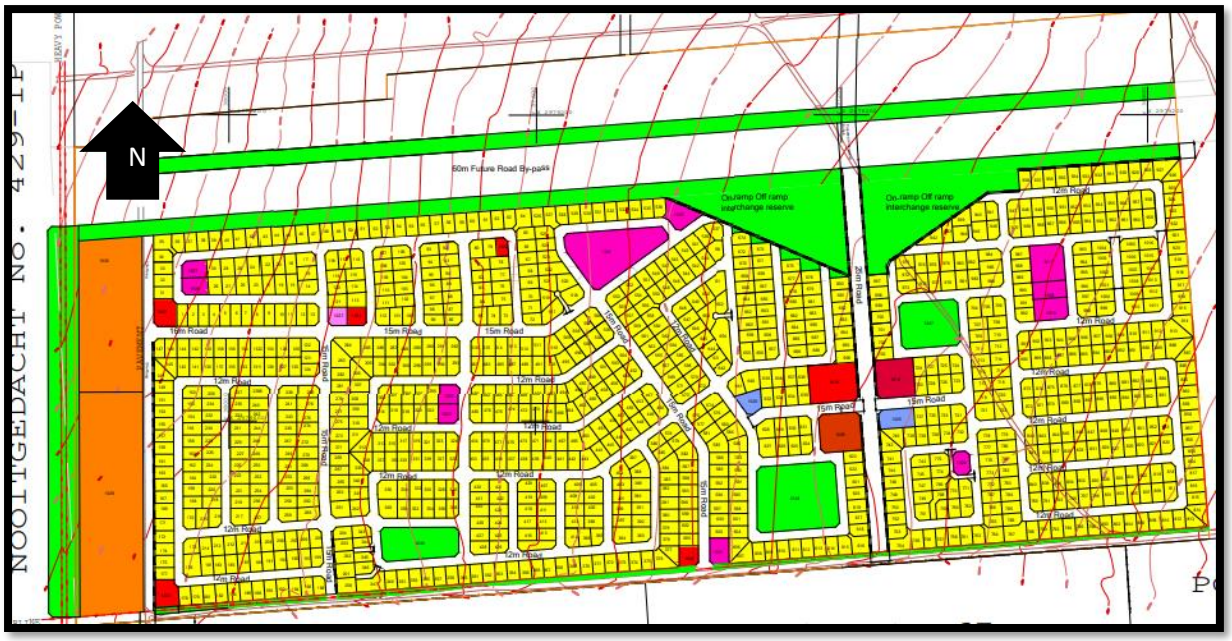


Figure 2: Layout Plan indicating the proposed area earmarked for Township development

Adjacent developments

The area immediately surrounding the subject property has the following activities

- Informal settlements (Jouberton Extension 31)

In terms of the EIA Regulations of 2014, the table below presents the list of activities that have been investigated and needs to be authorised.

Table 2. Summary of the activities associated with the project which require environmental authorisation.

Indicate the number and date of the relevant notice:	Activity No (s) and Activity Description (in terms of the relevant notice)	Describe each listed activity as per project description
GN.R. 325, 4 December 2014	15 The clearance of an area of more than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality is proposing low-income residential development within 100Ha area. The proposed development consisted of construction of houses and associated human settlement infrastructure, including roads and sanitation and water services infrastructure on the area that has not yet been develop and consist of indigenous vegetation.
GN. R. 327 4 December 2014	28 Residential, mixed, retail, commercial, industrial, or institutional developments where such land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such	Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality is proposing low-income residential development within 100Ha area. The proposed development consisted of construction of houses and associated human settlement

	development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or	infrastructure, including roads and sanitation services. The proposed area is currently being used for grazing of domestic animals and the confirmation letter from Town Planner appointed by HDA and City of Matlosana Local Municipality indicate that the study area is within urban edge and is 100 Ha
GN.R. 324 4 December 2014	4 (h) (iv)The development of a road wider than 4 metres with a reserve less than 13,5 metres. . Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority; h North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;	The development of the internal roads within the proposed Township are wider than 4 m with a reserve of more than 13 and to be located within the Critical Biodiversity Area as per the Environmental Screening Tool.
GN. R. 324, 4 December 2014	12 (h) (iv) The clearance of an area of 300 square metres or more of indigenous vegetation except where such clearance of indigenous vegetation is required for maintenance purposes undertaken in	Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality is proposing low-income residential development within 100Ha area. The proposed development consisted of construction of houses and associated human settlement

	accordance with a maintenance management plan h North West iv. Critical biodiversity areas as identified in systematic biodiversity plans adopted by the competent authority;	infrastructure, including roads and sanitation services. The study area is located within the Critical Biodiversity area as per Environmental Screening Tool.

Description of the associated structures and infrastructure related to the development

Housing Development Agency (HDA) on behalf of City of Matlosana Local Municipality is proposing low-income residential development within 100 Ha area. The proposed development consisted of construction of Residential Houses and Residential Units and associated human settlement infrastructure, including roads and sanitation and water services infrastructure. The afore-mentioned development is to also include the installation of UPVC pipelines for the transportation of water from the bulk reservoir into various parts of the community. In addition to this, it will include also internal reticulation for water and sewage.

The proposed Township will entail two (2) types of the residential dwellings (Dwelling Houses and Residential Units), parks, social hall, place of worship, primary school, creche, clinic, commercial, special use, municipal purposes, business area, taxi rank, N12 future by-pass, internal road reserves and electric powerline servitudes. See Table below for footprint of each infrastructure within the proposed Township.

Table indicating the details of the developments within the proposed Township development.

Zoning	Land Use	Evern No.	No. of Evern	Area in Ha (Hectares)
Residential 1	Dwelling Houses	1-1016	1016	41.7
Residential 2	Residential Units	1029,1030	2	4,0
Public Open Space	Parks	1247-1250	4	1.82
Institutional	Social Hall	1020	1	0.13
	Place of Worship	1018,1021,1023,1027	4	0.31
	Primary School	1024	1	0.66
	Creche Institutional (Creche)	1025, 1019, 1026, 1022	4	0.43
	Clinic	1017	1	0.21
Industrial	Commercial	1018	1	0.47
Special Use	Special Use	1027	1	0.05
Municipal	Municipal purposes	1025, 1026	2	0.18
Business	Business	1019-1024	2	0.68
Transportation	Taxi Rank	1028	1	0.266
	N12 Future By-Pass and Internal Road Reserves and			49.1

	Electrical Powerline servitudes			

Layout Plan of proposed Township development and formalisation Project is attached

Roads

The following upgrades or contribution to upgrades is necessary as part of the proposed development responsibility

- Contribute to the proposed Intersection 2 (D152/ Access Road 2 to both Jouberton Extension 31 and proposed development) traffic circle
- Contribute to the signalisation of Intersection 4 (Swart Street and Ingle Avenue) when warranted.
- Signalise Intersection 5 (Leemhuis Street/ Access Road 1 to proposed development and new class 4 road linking D152 and Leemhuis Street) when warranted.
- Upgrade Intersection 6 (D152/ New Class 4 Road) with the relevant proposed turning lanes.

Storm Water Drainage

The internal storm water run-off from the Proposed Township will drain from asphalt or paved roads to kerb and/or grid inlets located at low points within the Proposed Township and discharge into the open field.

The storm water outlet structures will cater for energy breakers at the outlets to minimise the possibility of erosion at the point of discharge. The internal storm water infrastructure will be designed for a 1:50 year flood return period and a run-off coefficient of 80% will be allowed for the Proposed Township.

Water Supply

The Proposed Township falls within the water supply area of City of Matlosana Local Municipality.

Water supply for the Proposed Township is provided by the Midvaal Water Company. It supplies the greater municipality of Matlosana as well as the mining and industrial undertakings in the area with potable water.

City of Matlosana Local Municipality confirmed that it will install all engineering services (internal and external) as well as water reticulation for the Proposed Development.

Sewer

The Proposed Development falls within the drainage region of the City of Matlosana Local Municipality.

The natural drainage pattern of the Proposed Township is from the northwest to the south east.

City of Matlosana Local Municipality confirmed that it will install all sewerage engineering services (internal and external) as well as sewerage reticulation for the Proposed Township.

Electrical Supply

According to the Service Report (CivilConsult Consulting Engineers, August 2022), the proposed Township will be supplied with electricity from the Matlosana Power Supply Network.

The external network as well as the internal network will adhere to Matlosana's standards and requirements. The internal network will be taken over by Matlosana.

Other standards to which the electrical design will adhere to include the relevant SABS safety and equipment standards, as well as the NRS 048 Quality of Supply Standard.

5. DESCRIPTION OF POLICY AND LEGISLATIVE CONTEXT WITHIN WHICH THE DEVELOPMENT IS LOCATED

The Constitution of South Africa (Act 108 of 1996)

The legal reference source for environmental law in South Africa is found in the Constitution of the Republic of South Africa, Act 108 of 1996. All environmental aspects should be interpreted within the context of the Constitution. The Constitution has enhanced the status of the environment by virtue of the fact that environmental rights have been established (Section 24) and because other rights created in the Bill of Rights may impact on environmental management. An objective of local government is to provide a safe and healthy environment (Section 152) and public administration must be accountable, transparent and encourage participation (Section 195(1) (e) to (g)).

Implications for the proposed development:

- Obligation to ensure that proposed activity will not result in pollution and/or ecological degradation;
- Obligation to ensure that where possible conservation is promoted; and
- Obligation to ensure that the proposed activity is ecologically sustainable, while demonstrating economic and social development.

The National Environmental Management Act (Act 107 of 1998)

The National Environmental Management Act (Act 107 of 1998) commonly known as "NEMA" is South Africa's overarching framework for environmental legislation. The object of NEMA is to provide for operative environmental governance by establishing principles for decision-making on matters affecting the environment, institutions that will promote co-operative governance, and procedures for co-ordinating environmental functions exercised by organs of state.

It sets out a number of principles that aim to give effect to the environmental policy of South Africa. These principles are designed to, amongst others, serve as a general

framework for environmental planning, as guidelines by reference to which organs of state must exercise their functions and guide other law concerned with the protection or management of the environment.

The principles include a number of internationally recognised environmental law norms and some principles specific to South Africa, i.e. the:

- Preventive principle;
- Precautionary principle;
- Polluter pays principle; and
- Equitable access for the previously disadvantaged to ensure human wellbeing.

Chapter 5 of NEMA is designed to promote integrated environmental management. Environmental management must place people and their needs at the forefront of its concerns, and serve their physical, psychological, developmental, cultural and social interests equitably. Development must be socially, environmentally and economically sustainable. Sustainable development therefore requires the consideration of all relevant factors including:

The avoidance, or minimisation and remediation, of disturbance of ecosystems and loss of biological diversity;

The avoidance, or minimisation and remediation, of pollution and degradation of the environment;

The avoidance, or minimisation and remediation, of disturbance of landscapes and sites that constitute the nation's cultural heritage;

That waste is avoided, or, minimised and re-used or recycled where possible and otherwise disposed of in a responsible manner;

That the use and exploitation of non-renewable natural resources should be undertaken responsibly and equitably;

That the development, use and exploitation of renewable resources and the ecosystem of which they are part should not exceed the level beyond which their integrity is jeopardised;

The application of a risk-averse and cautious approach; and

That negative impacts on the environment and on people's environmental rights be anticipated and prevented, and where they cannot be altogether prevented, are minimised and remedied.

Regulations promulgated under NEMA include the Environmental Impact Assessment regulations published under Government Notice No. 983 for those activities that require environmental authorisation by means of a Basic Assessment Process or an Environmental Impact Assessment (EIA) Process.

Implications for the proposed development

- The principles espoused in NEMA serve as guidelines for relevant decision makers in ensuring the protection of the environment. Therefore, the proposed development must be consistent with these principles;
- Where this is not possible, deviation from these principles would have to be very strongly motivated;
- The activity may not take place without the required authorisation; and
- Both the Scoping and EIA processes have been facilitated with the submission of both a Scoping Report and an Environmental Impact Report.

National Environmental Management: Waste Act, 2008 (Act No 59 of 2008)

One of the main objectives of the Act is to provide for measures for the prevention of pollution and ecological degradation and for securing ecologically sustainable development through providing for:

- National norms and standards for regulating the management of waste

by all spheres of government;

- Specific waste management measures;
- The licensing and control of waste management activities;
- The remediation of contaminated land; to provide for the national waste information system; and
- Compliance and enforcement mechanisms.

In terms of the NEMWA, certain waste management activities must be licensed and in terms of Section 44 of the Act, the licensing procedure must be integrated with an environmental impact assessment process in accordance with the EIA Regulations promulgated in terms of the NEMA. Government Notice921, which was published in Government Gazette No.37083, on 29 November 2013 and implemented with immediate effect, lists the waste management activities that require licensing. A distinction is made between Category A waste management activities, which require a Basic Assessment, and Category B activities, which require a full EIA (Scoping followed by Impact Assessment).

The National Environmental Management: Biodiversity Act (Act 10 of 2004)

The Act provides for the management and conservation of South Africa's biodiversity within the framework of the NEMA. This Act allows for the protection of species and ecosystems that warrant national protection, the sustainable use of indigenous biological resources, the fair and equitable sharing of benefits arising from bio-prospecting involving indigenous biological resources and the establishment and functions of the South African National Biodiversity Institute. Key elements of the Act are:

- The identification, protection and management of species of high conservation value;
- The identification, protection and management of ecosystems and areas of high biodiversity value;

- Alien invasive species control of which the management responsibility is directed to the landowner; and
- Section 53 of the Act identifies that any process or activity that is regarded as a threatening process, requires environmental authorization via a full Environmental Impact Assessment (Government Notice No. 387).

Implications for the current development

- Areas of high biodiversity need to be protected;
- The Department of Economic Development, Environment, Conservation and Toursim would have to be contacted in order to obtain a permit to remove any protected indigenous plants.

The National Water Act, 1998 (Act No.36 of 1998)

The National Water Act (The Act) provides for the management of South Africa's water resources. The purpose of the Act is to ensure that the Republic's water resources are protected, used, developed, conserved and controlled.

- Any activity that triggers section 21 of the National Water Act requires an authorisation from the Department of Water and Sanitation
- Water Supply - Under the National Water Act, a developer is required to obtain the necessary permits for water usage and the disposal of wastewater from the authority responsible for the administration of the Act, namely the Department of Water and Sanitation (DWS).
- Any private well or borehole sunk for the abstraction of groundwater has to be reported and registered with the DWS.
- Wastewater - The National Water Act is the principal piece of South African legislation governing wastewater management.

Implications for the proposed development:

- Any proposed water uses must be specified and registered and where necessary licenses applied for;
- Any modifications to drainage lines must be investigated in terms of water use requirements;
- Reasonable measures must be taken to prevent pollution of water resources;
- Where pollution of a water resource occurs measures to be taken to remedy the situation;
- The developers must take all reasonable measures to minimise the impacts of the incident, undertake clean-up procedures, remedy the effects of the incident and take measures as directed by the catchment agency; and
- Waste created during construction needs to be controlled adequately to negate the impacts on ground and surface water.

The National Heritage Resources Act, 1999 (Act 25 of 1999)

The Act aims to promote the good management of the national estate of South Africa. The national estate can include:

- Places, buildings, structures and equipment of cultural significance;
- Places to which oral traditions are attached or that are associated with living heritage;
- Historical settlements and townscapes;
- Geological sites of scientific or cultural importance;
- Archaeological and paleontological sites;

In terms of Section 38 of the Act, the South African Heritage Resources Agency (SAHRA) must be notified during the early planning phases of a project for any development that includes the following activities:

- the construction of a road, wall, powerline, pipeline, canal or other similar form of linear development or barrier exceeding 300m in length;
- any development or other activity which will change the character of a site exceeding 5 000 m² in extent: involving three or more existing erven or subdivisions thereof, involving three or more erven or divisions thereof which have been consolidated within the past five years, the costs of which will exceed a sum set in terms of regulations by SAHRA or a provincial heritage resources authority

Implications for the proposed development:

- No person may alter or demolish any structure or part of a structure, which is older than 60 years or disturb any archaeological or paleontological site or grave older than 60 years without a permit issued by the relevant provincial heritage resources authority. The age of the stable building on site needs to be determined;
- SAHRA must be informed of the proposed development and provided an opportunity to comment. This may result in the need for a phase 1 heritage impact assessment.

City of Matlosana Local Municipality EMF

The EMF delineates geographic areas in terms of environmental attributes, such as water resources, cultural and heritage resources, agricultural potential and economic attributes, assesses the current status quo against the vision or desired state for the study area and identifies environmental management or development constraint zones (DCZ) to guide land use planning and development. Furthermore, the EMF, which in

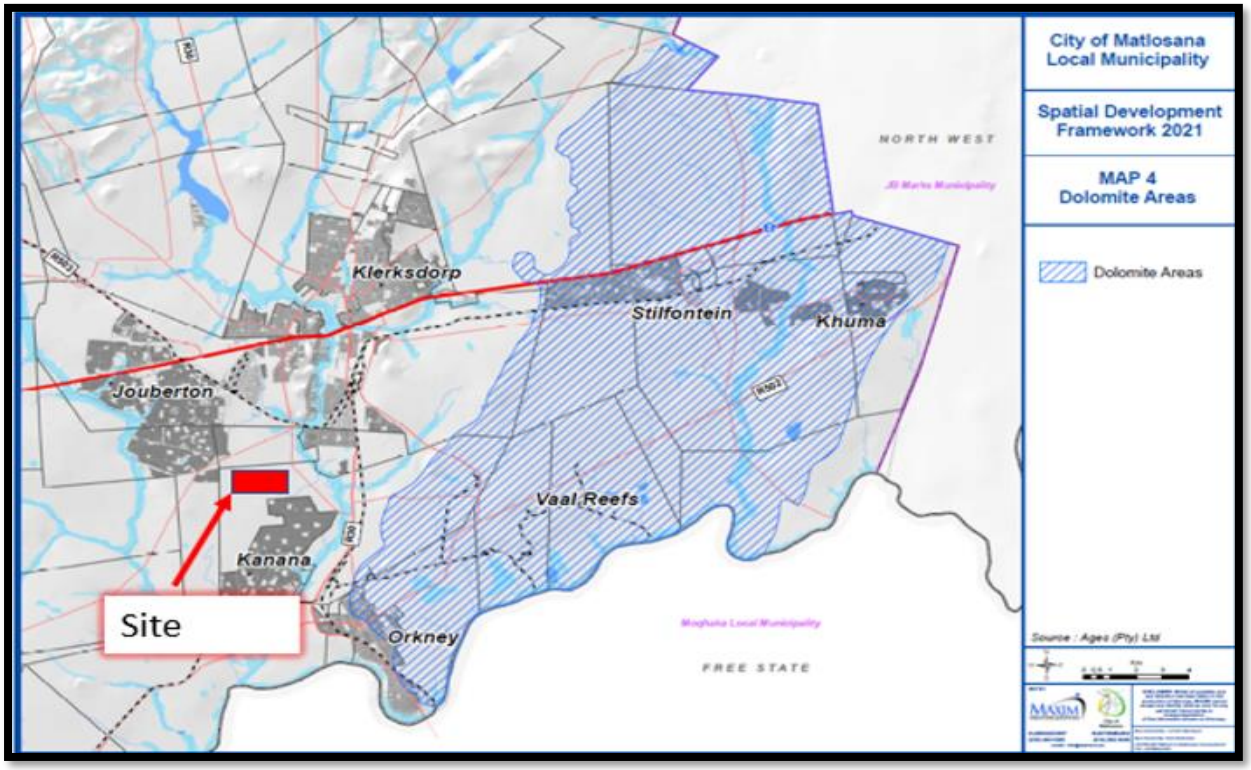
terms of its development guidelines for conservation management zones prohibits development directly adjacent to riparian zones of watercourses.

The EMF will be used to proactively plan development in a sustainable manner within the Municipality and to guide decision-making by authorities on development applications, ultimately ensuring continued progress towards sustainability.

Informal Settlements, as the dispersed nature of these settlements hinders formalization and service delivery and promotes poorer living conditions and environmental degradation.

The need for low cost housing is driven by the influx of people attracted to working for the mining sector. This populace ends up in informal settlements because of the inappropriate location of municipal land for development.

City of Matlosana Local Municipality SDF



The main aim of the SDF is the provision of guidance regarding physical development of City of Matlosana Local Municipality to improve the way activities are arranged in the

physical space. By enhancing the ways in which activities are situated in City of Matlosana Local Municipality as well as interrelation of several activities with others will eventually improve the efficient and effective functioning of City of Matlosana Local Municipality. This strategic arrangement of activities will also improve the municipality capability to contribute to economic expansion, social well-being, and environmental sustainability. The key objective of City of Matlosana Local Municipality (CoMLM) SDF is the attainment of an integrated and coordinated municipal area wherein all the sectors can contribute to an effective, well-organized, justifiable, liveable as well as sustainable urban environment. The CoMLM-SDF is against urban invasion into intensive mining areas.

Land uses refer to the integration of suitable and compatible residential and non-residential land uses within the same area and can include non- residential land uses such as business, offices and commercial activities. As in the case with densification, the ideal of having use development should not be taken as a blanket philosophy. Certain areas, adjacent to the development corridors, between nodes can be considered for land uses.

The SDF has an influence on both private and public capital investments in the sense that it needs to fulfil the following:

- The SDF ought to give direction to private investors with regard to where certain developments will be allowed as well as where they won't be allowed;
- The SDF should make it a point that it creates a conducive environment for the implementation of municipality's Integrated Development Plan;

The proposed township development will promote a compact semi-urban structure through urban infill and densification specifically within the individual settlement clusters. Such integration and consolidation, according to the SDF, is aimed at strengthening the corridors proposed in the Development Concept by linking the major

settlements of the Municipal area to each other and to the Klerksdorp Core Area through infill development

According to the SDF, the CoMLM is listed as a priority investment area with high social and economic returns. A nodal strategy is therefore proposed which includes the development of the primary regional nodes, enhancement of urban-rural linkages with functional areas, the identification and monitoring of spatial economic dynamics and regional growth networks, and the integration of the nodes on a national and international scale via the development corridors. The spatial economic development programmes in high economic areas such as Klerksdorp, are encouraged to focus on the semi-urban nodes, which are regarded as economic growth engines, as the basis for further concentration of development efforts. As for the rural strategy, a phased approach is proposed which includes:

- The development and enhancement of selected rural nodes/clusters;
- The formalisation of these selected villages; and
- The integration of villages into the formal urban system.

The primary aim of the rural settlement strategy, according to the SDF, is to attract a critical mass of complementing programmes to specific nodes (villages) which would demonstrate the benefits that can be achieved through synergy of various development initiatives and economy of scale. A beneficiation approach is encouraged in the implementation of the strategy which offers various benefits such as:

- Accessibility to higher level of public services;
- Accessibility to better social and economic infrastructure;
- Better opportunities for access to jobs (government or other LED projects); and
- A better place to; live in by formalising villages and the provision of proper amenities.

All the above applicable strategies and approaches have been considered in the formulation of the conceptual layout plan for the proposed township, particularly the semi-urban strategy and it is not located within the dolomitic area as indicated in the

EIA Guidelines published under NEMA

The following guidelines have been considered in the production of this EIAR Report:

DEAT (2002) Scoping, Integrated Environmental Management, Information Series 2, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

DEAT (2005) Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 2005, Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

DEAT (2005) Guideline 4: Public Participation in support of the EIA Regulations, 2005. Integrated Environmental Management Guideline Series. Department of Environmental Affairs and Tourism (DEAT), Pretoria.

DEAT (2006) Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

Environment Conservation Act 73 of 1989

The objectives of the Environment Conservation Act 73 of 1989 ("ECA") are to provide for the effective protection and controlled utilization of the environment. Following the enactment of NEMA, several the powers of the Act have either been repealed or assigned to the provinces. These include the EIA Regulations for activities that were regarded as detrimental to the environment and were published under Government Notice Regulation 1182 of 05 September 1997, as amended. New EIA Regulations have been promulgated under Section 24(5) of NEMA and are published under Government Notices No. 325 and 324.

Development Facilitation Act (DFA)

The Development Facilitation Act (Act 67 of 1995) has 3 main objectives. Firstly, to provide a coherent policy framework for land development, land registration and planning; secondly to speed up and facilitate the approval of land development applications; and thirdly to provide for the overhaul of existing planning and land development frameworks. The DFA, thus, introduces extraordinary measures to facilitate and speed up the implementation of reconstruction and development programmes and projects. The Act further includes general principles governing land development, including nationally uniform procedures for the subdivision and development of land in urban and rural areas to promote the speedy provision and development of land for residential, small-scale farming or other needs and uses.

North West Biodiversity Sector Plan, 2015

The purpose of a Biodiversity Sector Plan is to inform land use planning, environmental assessments, land and water use authorisations, as well as natural resource management, undertaken by a range of sectors whose policies and decisions impact on biodiversity. This is done by providing a map of biodiversity priority areas, referred to as Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs), with accompanying land use planning and decisionmaking guidelines.

The North West Biodiversity Sector Plan identifies a network of Critical Biodiversity Areas (CBAs) and Ecological Support Areas (ESAs) in the province based on a systematic biodiversity plan. Collectively, the CBAs and ESAs cover 57% of the province. These were first identified in the North West Biodiversity Conservation Assessment (DACERD, 2009), and are comprehensively re-assessed and updated for this plan. The Biodiversity Sector Plan therefore represents the most current information available on biodiversity in the province and is an update of the data given in the NW Environment Outlook Report (2013) and other assessments that precede it, such as the National Biodiversity Assessment (2011), the National Freshwater Ecosystem Priority Assessment (2011).

The Biodiversity Sector Plan is consistent with the National Environmental Management: Biodiversity Act (No. 10 of 2004) (hereafter referred at as the Biodiversity Act), and meets the requirements of the Guideline Regarding the Determination of Bioregions and the Preparation and Publication of Bioregional Plans (DEAT, 2009). However, it did not include detailed stakeholder engagement, which is required to gazette the Biodiversity Sector Plan as a bioregional plan.

Implications for the proposed development:

- Critical Biodiversity Areas (CBAs) are terrestrial and aquatic areas of the landscape that need to be maintained in a natural or near-natural state to ensure the continued existence and functioning of species and ecosystems and the delivery of ecosystem services.
- In CBAs where a change in land use results in a change from the desired ecological state, the impact on biodiversity because of this change is most significant locally at the point of impact through the direct loss of a biodiversity feature.

6. NEED AND DESIRABILITY OF PROPOSED ACTIVITY AND MOTIVATION FOR PREFERRED DEVELOPMENT

According to the Guidelines on Need and Desirability, when "need and desirability" must be considered as part of an EIA process, the content of the IDPs , SDFs, EMFs and other relevant plans, frameworks and strategies must be taken into account when considering the merits of each application. Whether a proposed activity will be in line with or deviation from the plan, framework, or strategy per se is not the issue, but rather the ecological, social, and economic impacts that will result because of the alignment or deviation. As such, the EIA must specifically provide information on these impacts to be able to consider the merits of the specific application.

The National Development Plan (NDP) is a plan, which seeks to reduce and ultimately eliminate poverty and inequality within the country by the year 2030, through the unification and collaborative efforts of all South Africans. The plan aims to develop the capabilities of individuals and of the country and to create opportunities for all citizens. To achieve the objective, the NDP is divided into several chapters, each addressing a specific sector that relates to the objective of the NDP.

In 2004, the Department of Housing declared the desire to eradicate informal settlements in South Africa by 2014 following the unprecedented housing backlog, proliferation of informal settlements, social exclusion, and the inability of municipalities to provide basic infrastructure to the urban poor households.

To deal with housing delivery backlog, the municipality will embark on the urban site and service approach, as well as acceleration of the implementation of the social housing policy. We will also be applying for accreditation from the province to provide housing as well as getting the distribution licence for electricity from Eskom for Matlosana as a whole and RDP houses needed.

In terms of the Municipal Systems Act 32 of 2000, all municipalities (i.e. metropolitan, district and local) have to undertake an Integrated Development Plan (IDP) process to produce IDPs. As the IDP is a legislative requirement it has a legal status and it supersedes all other plans that guide development at local government level. The provision of integrated and sustainable human settlements is listed as one of the strategic objectives of the Municipality's IDP, which means that housing must be accompanied by the provision of other services and amenities required to improve the socio-economic conditions of the residents of that area (i.e. access to community facilities such as educational, entertainment, cultural, health, sports and welfare services).

The area was identified in the CoMLM IDP as a restructuring zone for social housing and was identified as a precinct where residential expansion needs to take place especially Kanana (Orkney).

PROJECT ALTERNATIVES

The identification of alternatives is a key aspect of the success of the EIA process. All reasonable and feasible alternatives must be identified and screened to determine the most suitable alternatives to consider and assess in the EIA phase. There are, however, some significant constraints that must be considered when identifying alternatives for a project of this scope. Such constraints include social, financial and environmental issues, which will be discussed in the evaluation of the alternatives. Alternatives can typically be identified according to location alternatives, layout/design alternatives, Process/Technological alternatives and activity alternatives (including the No-Go option).

For any alternative to be considered feasible such an alternative must meet the need and purpose of the development proposal without presenting significantly high associated impacts. As mentioned in Section 6 (this section), the need for the proposed project includes the following key drivers to address the current housing shortage, to

improve service delivery, to prevent extensive conditions of poverty and to prevent the further persistence of social imbalances.

The alternatives are described, and the advantages and disadvantages are presented below. It is further indicated which alternatives are considered feasible from a technical as well as environmental perspective. Alternatives can also be distinguished into discrete or incremental alternatives. Discrete alternatives are overall development options, which are typically identified during the pre-feasibility, feasibility and/or scoping phases of the EIA process (DEAT; 2004). Incremental alternatives typically arise during the EIA process and are usually suggested as a means of addressing identified impacts. These alternatives are closely linked to the identification of mitigation or management measures and are not specifically identified as distinct alternatives. This section provides information on the development footprint alternatives, the properties considered, as well as the type of activity, activity layout, technological and operational aspects of the activity.

Details of Location Alternatives

Location alternatives relate to the proposed Township components as well as the location of ancillary activities and structures (e.g. construction camps, laydown areas, staff accommodation, etc.). The proposed Township is to be located close to south of Jouberton Extension 1 and adjacent to informal houses, within the City of Matlosana Local Municipality (CoMLM), in North West Province. The proposed Township will be located on Portion 100 of the Farm Nooitgedacht 434 IP. The proposed township footprint will be approximately 100 hectares in size as per the layout plan provided by Ditsamai Investments and Projects. The proposed Township establishment study area is owned by the CoMLM purchased by Housing Development Agency (HDA) and earmarked for a housing development to address the issue of housing shortage that the local municipality is facing as per Spatial Development Plan of the City of Matlosana Local Municipality.

On the latest site inspection, it was found out that the small portion of the proposed Township area has been significantly transformed, with informal settlements mushrooming. Advantages associated with the proposed Township area include the following:

- The proposed Township site is owned by the City of Matlosana Local Municipality (CoMLM);
- The proposed Township site is already partlially transformed by informal settlements, thus limited environmental impacts can be expected; and
- The proposed development site is near the Jouberton Extension 3 and another informal settlement.

Selection of new potential sites for the proposed Township will likely result in new impacts as a result of the possible disturbance of undeveloped land/environment, as well as financial implications if the acquisition of new privately owned land is required.

Furthermore, the Housing Development and CoMLM identified and earmarked this location for residential development previously. As such, no other locations were assessed. Location alternatives are therefore not considered feasible for this application and will not be assessed further post this final Environmental Impact Assessment.

Design and Layout Alternatives

Design and layout alternatives ensure the consideration of different design and spatial configurations of the proposed Township on Portion 100 of the Farm Nooitgedacht 434 IP, to enhance the positive impacts and to reduce the negative impacts. As such, due consideration was given to the placement, location, and orientation of required infrastructure and activities in relation to site environmental aspects/sensitivities as observed during the site inspection as well as the environmental screening report. The layout options has been considered in more detail during this EIA phase and part of determining the preferred layout for the proposed township:

- Maximum development places its focus on developing Portion 100 of the Farm Nooitgedacht 434 IP as if there are no sensitivities within the proposed site.
- The Environmental sensitivity option, it is anticipated that the proposed township development will be directly affected by, among others, the sensitivity of the proposed area (heritage sites, fauna and flora and the steep gradient of the site, etc.), findings and recommendations of the specialist studies, engagement with Interested and affected Parties and Detailed engineering designs of the proposed Township.

Details of technology alternatives

Process alternatives imply the investigation of alternative technologies that can be used to achieve the same goal. This includes using environmentally friendly designs or materials and re-using scarce resources like water and non-renewable energy sources. As far as the proposed township development is concerned, the following was be investigated and considered as process alternatives:

- The proper management of stormwater, especially along the access roads/residential street surfaces and drains. It is recommended that where possible, environmentally friendly technologies are considered during construction of the houses and associated infrastructure;
- The reduction of generated waste during the construction and decommissioning phases where possible; and
- Use of energy efficient technologies during the operational phase such as solar energy for water heating. It is recommended that solar energy for water heating be considered to decrease electricity demand from the municipality/Eskom grid and the CoMLM approach the Department of Mineral Resources and Energy for the installation of the solar energy infrastructure for each house.

CoMLM is to ensure the provision of quality basic services and infrastructure within a well-planned spatial structure. This priority, according to the CoMLM IDP (2022-2027), is

to be supported by a logical and well-planned spatial structure sustained by high quality infrastructure, and driven by the following objectives to ensure sustainability:

- Accelerated delivery and maintenance of quality basic and essential services to all Communities;
- Improved service delivery through provision of high quality, reliable and cost effective infrastructure based on integrated spatial planning;
- Develop and implement educational/awareness programmes to obtain community in and ownership in the use and protection of community and municipal facilities;
- Implementation of a Town Business Development (TBD) Regeneration Strategy; and
- Improved public transport infrastructure

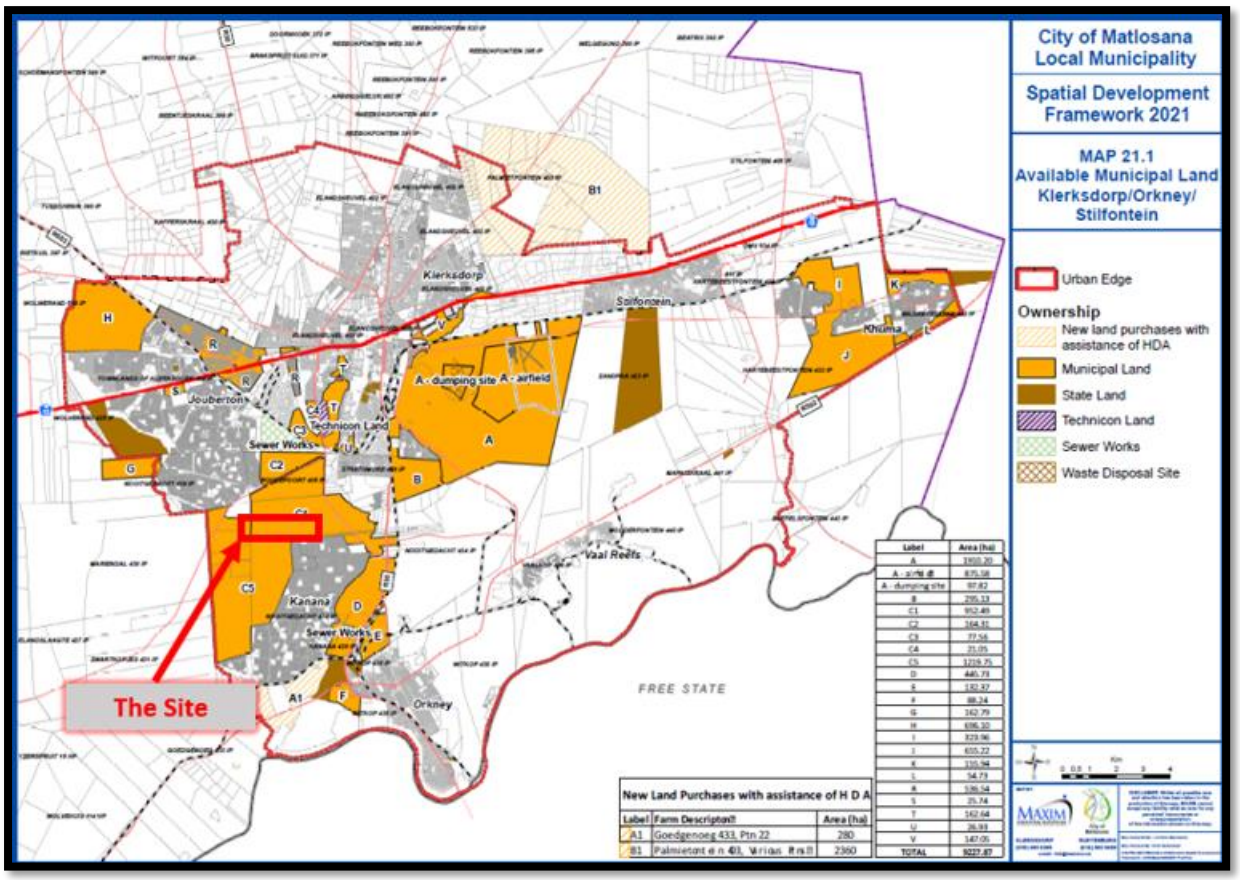
The layout of the proposed Township development has been designed based on some of the above priority and objectives and promotes a type of settlement as part of social cohesion and integrated development.

According to the CoMLM IDP (2022-2027), all new residential developments are reliant on access to municipal services and these include water supply, separate sewerage and storm water drainage systems, electricity supply, and waste management. These services are normally available in or next to existing developed areas and this favours infill development which promotes urban densification. The proposed township development is located next to existing semi-formal and informal settlement.

According to the CoMLM IDP (2017-2022), all future road developments for planned townships should be based on the Municipal Road Master plan, which seeks to significantly increase public transport usage across all income groups over the next decade it should be noted that the Traffic Impact Assessment study has also be undertake in line with the CoMLM Road Master Plan.

No-go Alternative

The No-go Alternative would mean that the proposed development would not be constructed at the proposed site and the land would remain vacant. Vacant land may result in more informal settlement development; illegal dumping; vegetation clearing for firewood; and alien plant invasion. In the absence of development, the CoMLM neither stand to gain additional revenue from rates and taxes, nor bulk services contributions and upgrades / improvements to the local and strategic road network of the Municipality.



7. PUBLIC PARTICIPATION PROCESS

The EIA Regulations specify that a public participation process must be conducted as an integral part of the EIA. The public participation followed the process stipulated in Section 41 of the 2014 EIA Regulations. This chapter outlines the public participation process followed.

The person conducting a public participation process must consider any relevant guidelines applicable to public participation as contemplated in section 24J of the Act and must give notice to all potential interested and affected parties of an application or proposed application which is subjected to public participation by—

(a) fixing a notice board at a place conspicuous to and accessible by the public at the boundary, on the fence or along the corridor of—

(i) the site where the activity to which the application or proposed application relates is or is to be undertaken; and

(ii) any alternative site;

(b) giving written notice, in any of the manners provided for in section 47D of the Act, to—

(i) the occupiers of the site and, if the proponent or applicant is not the owner or person in control of the site on which the activity is to be undertaken, the owner or person in control of the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;

(ii) owners, persons in control of, and occupiers of land adjacent to the site where the activity is or is to be undertaken and to any alternative site where the activity is to be undertaken;

(iii) the municipal councillor of the ward in which the site and alternative site is situated and any organisation of ratepayers that represent the community in the area;

(iv) the municipality which has jurisdiction in the area;

(v) any organ of state having jurisdiction in respect of any aspect of the activity; and

(vi) any other party as required by the competent authority;

(c) placing an advertisement in—

(i) one local newspaper; or

(ii) any official *Gazette* that is published specifically for the purpose of providing public notice of applications or other submissions made in terms of these Regulations;

(d) placing an advertisement in at least one provincial newspaper or national newspaper, if the activity has or may have an impact that extends beyond the boundaries of the metropolitan or district municipality in which it is or will be undertaken: Provided that this paragraph need not be complied with if an advertisement has been placed in an official *Gazette* referred to in paragraph (c)(ii); and

(e) using reasonable alternative methods, as agreed to by the competent authority, in those instances where a person is desirous of but unable to participate in the process due to—

(i) illiteracy;

(ii) disability; or

(iii) any other disadvantage.

(3) A notice, notice board or advertisement referred to in subregulation (2) must—

(a) give details of the application or proposed application which is subjected to public participation; and

(b) state—

(i) whether basic assessment or S&EIR procedures are being applied to the application;

(ii) the nature and location of the activity to which the application relates;

(iii) where further information on the application or proposed application can be obtained; and

(iv) the manner in which and the person to whom representations in respect of the application or proposed application may be made.

(4) A notice board referred to in subregulation (2) must—

(a) be of a size of at least 60cm by 42cm; and

(b) display the required information in lettering and in a format as may be determined by the competent authority.

Notification of Interested and Affected Parties (I&AP's)

Section 41 of the EIA Regulations outlines the requirements for the notification of all potential I&AP's. These requirements typically include the following:

- Giving notification to:

  The landowners and occupiers of the project site and those within 100m of the project site and alternative sites, or those directly influenced by the activity under consideration;

  The municipality that has jurisdiction over the area;

  The municipal councillors of the affected wards; and

  Any organ of state having jurisdiction in respect of any aspect of the activity.

- Placing an advertisement in a local and a provincial newspaper; and
- Fixing a notice board at a conspicuous place on all alternative sites.
- Notification of Landowners, Authorities, and Organs of State

- ❖ Surrounding landowners and occupiers of land within 100 metres of the proposed project site were notified by hand delivered letters of the applicant's intention to apply to the competent authority.

Newspaper Advertisement

A newspaper advertisement detailing information about the project and the EIA process that has since been finalised, as well as calling for the registration of I&AP's, was placed on 13 May 2022 in the Klerksdorp Record, the local newspaper for the surrounding area. The advertisement provided I&APs 30 days to register and to submit their comments in writing to Watercube Services. The closing date for registration and commenting was 13 June 2022.

An A3 size notice board detailing information about the project and the EIA process was erected on site at a recognised public area on 13 May 2022.

The purpose of this is to notify the public of the project and to invite the public to register as stakeholders and inform them of the Public Participation Process. Three (3) site notices at strategic, highly visible locations along the proposed site for a period of one month were placed.

Distribution of the Background Information Document (BID) in December to identified Interested and Affected Parties (IAPs), stakeholders and neighbouring residents.

The competent authority, which is the DEDECT, is required to provide an environmental authorisation (whether positive or negative) for the project. The DEDECT was consulted on submission of an application form and a draft EIR report (this report) will be submitted for comments.

Background Information Document

At commencement of the project a Background Information Document (BID) was prepared and sent to I&APs that provided a summary of the details of the proposed project as well as the EIA process that was to follow.

Public Meeting

As the proposed activity was limited in extent and very little interest was received from the public, a public meeting was not deemed necessary. Instead, the Interested and Affected Parties were consulted individually.

Consultation with Relevant Authorities

Final Environmental Impact Assessment Report distributed to Interested and Affected Parties.

DRAFT ENVIRONMENTAL IMPACT REPORT DISTRIBUTED TO:

DEDECT Case Officer: Ms Thembisile Makuwa
City of Matlosana Local Municipality

8. DESCRIPTION OF THE RECEIVING ENVIRONMENT

Introduction

This chapter provides a description of the receiving environment within the study area. This section describes the biophysical and socio-economic environment that may be affected and the baseline conditions which are likely to be affected by the proposed activity. This description is informed by various specialist studies undertaken for this assessment and also includes information obtained from various literature sources and is described at a level deemed appropriate for the EIA phase. A summary of the affected environment is provided and more detailed studies focused on significant environmental aspects of the development have also been provided. The three components to the environment are recognised as:

- Physical Environment
- Biological Environment
- Socio-Economic Environment.

Only those elements of the environment that have a direct bearing on the impact assessment process of the project are discussed. The severity of the potential impacts is largely determined by the state of the receiving environment. For example, the construction of a housing development in a pristine wetland habitat would have far more significant ecological impacts than the construction of a housing development in a residential area.

Physical Environment

Climate

The climate in Klerksdorp can be described as temperate. Rainfall ranges from 400 to 600mm per annum throughout most of the City of Matlosana increasing to between 800 and 1000mm per annum in the extreme north. Temperatures vary by up to 15^0C between summer and winter, with mean summer highs of approximately 32^0C and mean winter

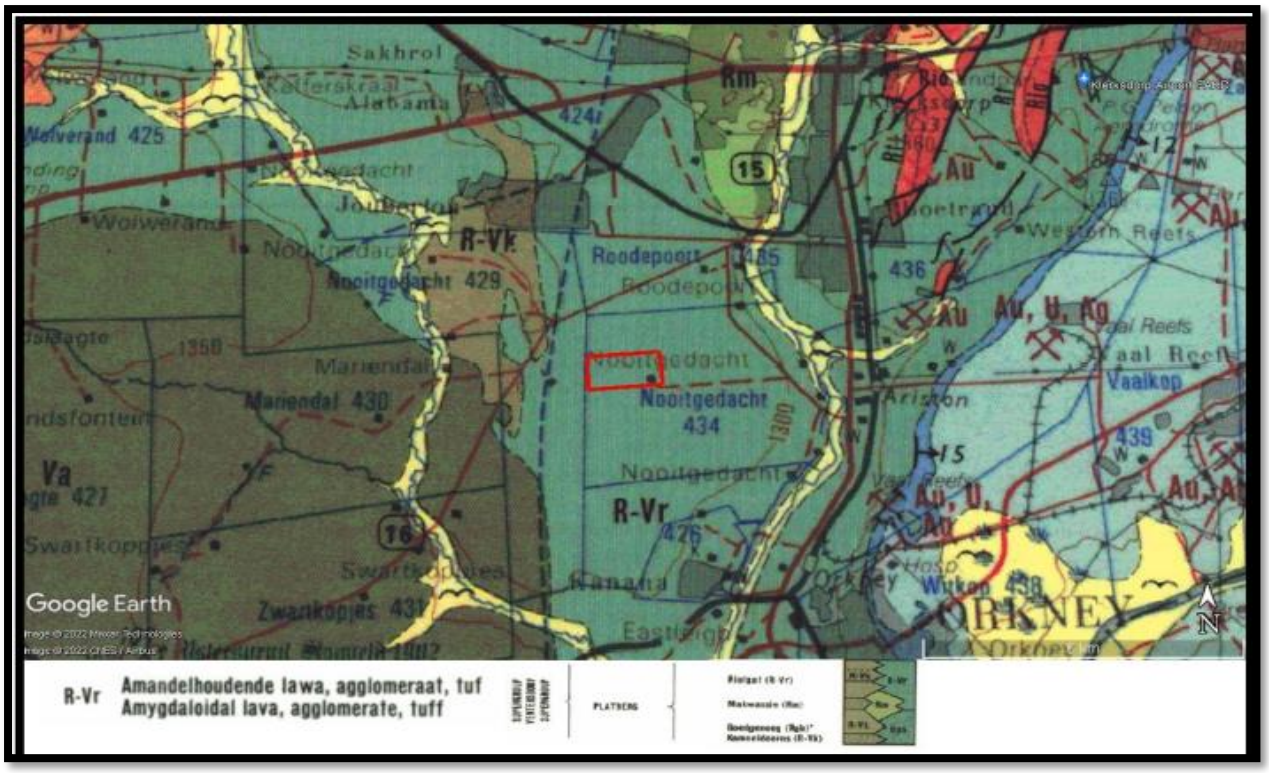
lows of approximately 0^0C. The predominant wind direction is northerly, with the windiest months being between August and November.

Topography

The City of Matlosana municipal area has a slightly irregular undulating topography dictated by the Vredefort event, which brought about the Vredefort Dome near Parys. The height above sea level ranges between 1 300m and 1 600m, increasing in a general north-westerly direction. The interaction between climate and topography has led to the evolution of a rich biodiversity. The ridges and hills of Klerksdorp have a characteristic range of different aspects, slopes, altitudes, soils and hydrological conditions conducive to heterogeneous abiotic conditions that provide a greater diversity of potential niches for plants and animals than homogeneous landscapes.

Geology

The Ventersdorp super group comprises a central core of gneiss granite surrounded by a rim of Witwatersrand, Transvaal or Ventersdorp rocks that contain shatter cones, indicative of a violent mechanical shock. The Ventersdorp formation is composed of volcanic andesitic lavas and related pyroclastics (metamorphic rock formed by extremely hot temperatures). The formation has a depth of 1800m, forming the undulating hills. The Witwatersrand super group is in excess of 5km thick. The rocks are mainly comprised of quartz, shale and conglomerates, containing mainly gold and uranium deposits. Such is the case of the gold bearing reef around Klerksdorp. Further east towards Stilfontein under a layer of dolomite and lava lie further gold bearing conglomerates



Soils

With the low rainfall generally experienced in the municipal area, soils are deemed to be only slightly leached. With high evaporation rates, there is a predominance of upward movement of moisture in the soils. This often leads to high concentrations of salts, such as calcium and silica, in soils, which sometimes leads to the formation of hard pans or surface duricusts. As a result, high levels of salinity or alkalinity may develop in these areas

Surface Hydrology

Water is one of the area's most critical and limiting natural resources. Klerksdorp falls entirely within the middle Vaal (W5) water management area and is divided into ten catchments. The Schoonspruit River and its tributaries as well as the Ysterspruit, Jagspruit and Kromdraaispruit rivers are the main rivers running through the Klerksdorp areaThe catchment area for Catchment Area 3 is approximately 3.382km^2 and forms part of the Quaternary Drainage Area A22A as indicated by the Department of Water and Sanitation and the average slope of the catchment area is 2.69%.

Biological Environment

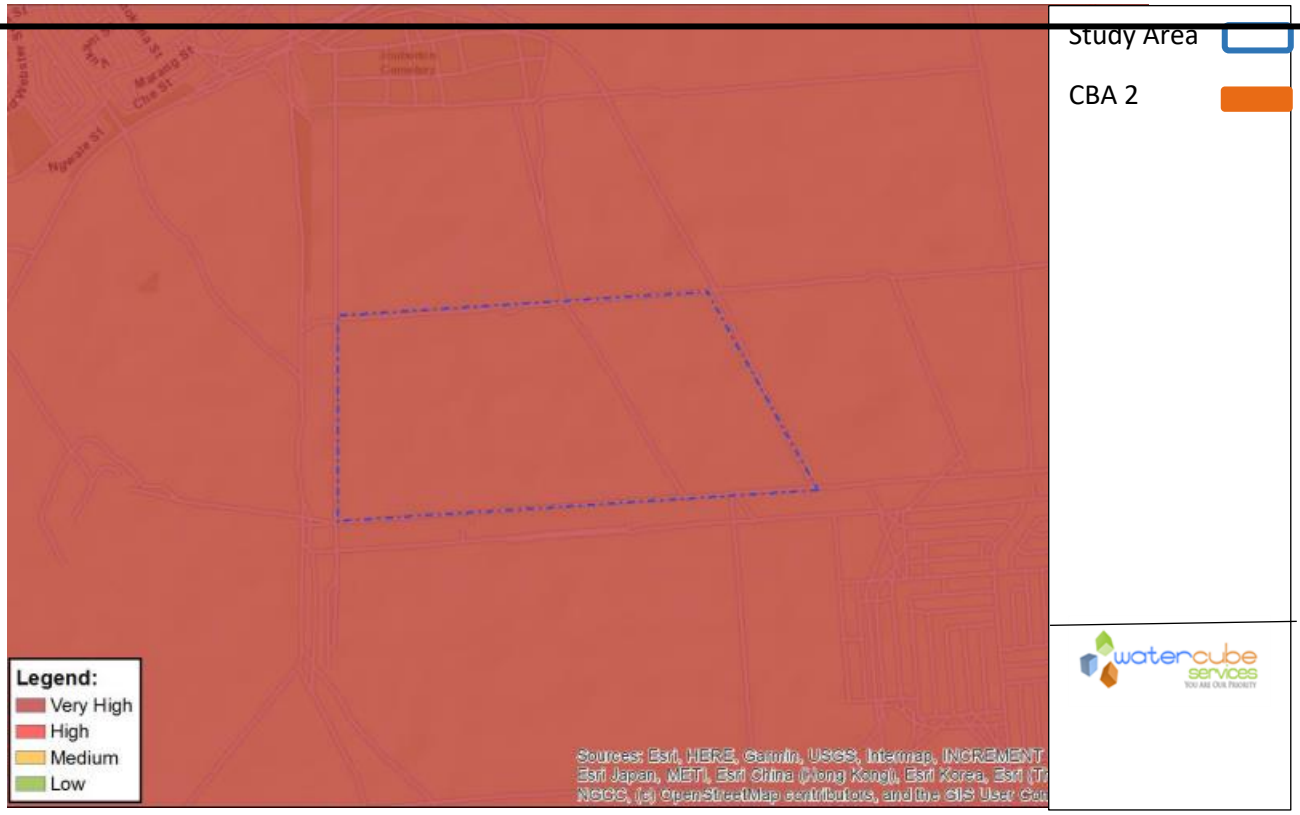
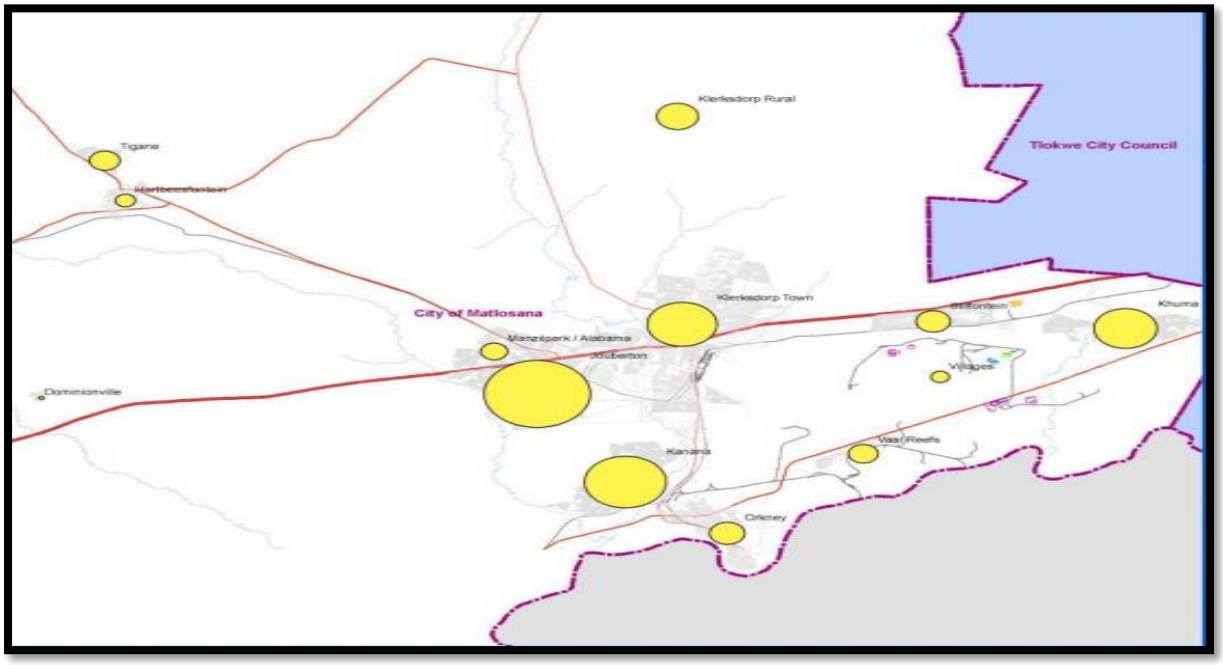


Figure 4: Vegetation map of the study area

The Klerksdorp area, falls within the grassland biome, comprising a wide range of grasses typical of arid areas. The grassland biome, which is second highest to the fynbos biome in species diversity, is regarded as one of the most critically threatened southern African ecosystems (RUTHERFORD & WESTFALL, 1994; SIEGFRIED, 1989). Most of this grassland has been cleared and cultivated with predominantly wheat and maize or is used for cattle and game farming and is disrupted by unnatural fire cycles (RUTHERFORD & WESTFALL, 1994)

Socio-Economic Environment



According to estimates based on the population growth rate of SA Statistics (1.04%) and the Matlosana Socio- Economic Report, the City of Matlosana has a total population of 438 486 people, of whom 103 407 (92%) are urbanised and 35 079 (8%) are rural. (Mining villages form part of the urban areas). The largest population concentrations are in Jouberton (31%), Kanana, Khuma and Tigane, which represent 67% of the total urban population. The City of Matlosana has a population density of 123 persons per km² people of which 92% are urbanised and 8% rural. The population distribution is indicated on Map 1. Population growth and household growth has declined over time. This can be ascribed to the fact that the local economy has become less dependent on the mining sector with the tertiary sectors growing in the long term.

SOCIO ECONOMIC STATUS						
Year	Housing Backlog as proportion of current demand	Un-employment Rate	Proportion of Households with no Income	Proportion of Population in Low-skilled Employment	HIV/AIDS Prevalence	Illiterate people older than 14 years
2017/18	21%	24%	26%	52%	20%	44%
2018/19	22%	25%	27%	55%	18%	42%
2019/20	22%	33%	16%	55%	18%	41%

9. METHODOLOGY IN ASSESSING IMPACTS

Introduction

This chapter outlines the generic methodology that will be followed when evaluating impacts. This generic methodology will be used when assessing the significance of the impacts related to the key issues and impacts raised in Environmental Issues and Impacts.

Methodology

Significance of Impact

This should be described as follows:

High: Where it could have a no-go implication for the project irrespective of any possible mitigation.

Medium: Where the impact could have a moderate influence on the environment, which would require modification of the project design or alternative mitigation.

Low: Where the impact would have little influence on the environment and would not require the project design to be significantly accommodated.

None: Where the impact would have no influence on the environment and would not require the project design to be accommodated at all.

The significance of the impact should be determined through the following criteria:

Nature of Impact

This includes a brief description of how the proposed activity will impact on the environment. This should be stated as:

- Positive (a benefit),
- Negative (a cost) or
- Neutral.

Extent

This refers to the geographic area on which the activity will have an influence and can include the following extents:

- Project site – the immediate location of the activity;
- Study area – the proposed area and its immediate environs within a 5 km radius of the activity;
- Catchment – area of land from which rainfall drains into a river;
- Local – Local Municipality;
- District;
- Regional – Province;
- National – Country; or
- International

Duration

This refers to the expected timeframe of an impact and can be expressed as:

- Short term (0 – 5 years);
- Medium (5 – 15 years);
- Long term (15 – 40 years, but where the impact ceases after operation); or
- Permanent (over 40 years and resulting in a permanent and lasting change that will always be there).

Likelihood

This considers the likelihood of the impact occurring and should be described as:

- Unlikely (where the impact is unlikely to occur);
- Likely (where there is a good probability, < 50 % chance that the impact will occur);
- Highly likely (where it is most likely, 50-90 % chance, that the impact will occur); or

- Definite (where the impact will occur, > 90 % chance of occurring, regardless of any prevention measures).

Severity Scale

The severity is used to evaluate how severe negative impacts would be on the environment, and is described as follows:

- Very high (an irreversible and permanent change that cannot be mitigated);
- High (long term impacts that could be mitigated, however this mitigation would be difficult, expensive or time consuming);
- Medium (medium term impacts that could be mitigated);
- Low (short term impacts with mitigation being very easy, cheap, less time consuming or not necessary); or
- No effect (no impact by the proposed development).

Beneficial Scale

The beneficial scale is used to evaluate how beneficial positive impacts would be on the environment, and is described as follows:

- Very High (a permanent and very substantial benefit with no real alternative to achieving this benefit);
- High (a long term impact with substantial benefit, and alternative ways of achieving this benefit being difficult, expensive or time consuming);
- Medium (a medium term impact of benefit with other ways of achieving this benefit being difficult, expensive and time consuming);
- Low (a short term impact and negligible benefit with other ways of optimising the benefits being easier, cheaper and quicker); or
- No effect (no impact by the proposed development).

10. DEGREE OF CONFIDENCE

It is also necessary to indicate the degree of confidence with which one has predicted the significance of an impact, based on the availability of information and specialist knowledge. For this reason, a 'degree of confidence' scale has been provided to enable the reader to determine the certainty of the assessment of significance:

- High - More than 90% sure of a particular fact.
- Medium - Over 70% sure of a fact, or of the likelihood of that impact occurring.
- Low - Over 40% sure of a fact or of the likelihood of an impact occurring.
- Unsure - Less than 40% sure of a fact or of the likelihood of an impact occurring.

11. OTHER ASPECTS

Other aspects that should be taken into consideration are:

- Impacts should be described both before and after the proposed mitigation and management measures have been implemented;
- All impacts should be evaluated for the full life cycle of the proposed development including construction and operational phases;
- The impact evaluation should take into account the cumulative effects of other activities which have occurred or are in the process of occurring within the study area; and
- Legal requirements (a list of the specific legal and permit requirements that could be relevant to the proposed project should be identified).

12. MITIGATION AND MONITORING

Where negative impacts are identified, mitigation measures (ways of reducing impacts) should be set and where positive impacts are identified, ways of enhancing these impacts should also be mentioned. Where no mitigation is feasible, this should be stated and the reasons given. Quantifiable standards against which the effectiveness of the mitigation can be measured should be set. This may include input into monitoring and management programmes.

13. IMPACT ASSESSMENT

This chapter provides an assessment of the impacts (including cumulative) associated with each issue and further includes mitigation measures to be implemented to reduce the significance of negative impacts.

Soil Loss and Erosion

During construction, the clearing and removal of vegetation, the digging of structure foundations, and earthworks may expose soils to wind and rain and could result in localised erosion. Furthermore, soils will be stockpiled during construction and could become vulnerable to erosion. The channelling of storm water may lead to the formation of gullies. This practice depletes the soil of nutrients, reduces organic matter in the soil and causes soil erosion.

Table 4. Impacts surrounding soil loss and erosion

ISSUE:	**SOIL LOSS AND EROSION**	
Project Phase	Construction and Operation	
Impact	Erosion	Siltation of Drainage Channels
Probability	Likely	Likely

Degree to which impact cannot be reversed	Low	Medium
Degree to which Impact may cause irreplaceable loss of resources	Low	Medium
Confidence level	High	Low
Significance Pre Mitigation	Medium (-ve)	Medium (-ve)
Significance Post Mitigation	Low (-ve)	High (+ve)
Degree of Mitigation	High	High
Nature	Negative (direct)	Negative (direct and indirect)
Extent	Study area	Study area
Duration	Short Term	Medium Term

Recommended Mitigation

Construction

Removal of vegetation to take place only within demarcated construction site. Non-essential removal of vegetation to be avoided;

No work is to be conducted within 100 metres of all drainage lines as per

Flood line Report recommendations

Formal runoff prevention to be implemented on steep slopes. These could be in the form of beams, netting, barriers constructed out of topsoil or flatter road surfaces

Operation

Surfaced roads to be maintained and velocity of runoff on roads and drains to be kept to a minimum. Flatter road surfaces and energy dissipaters could achieve this.

GROUND AND SURFACE WATER QUALITY

The surface and ground water may not be impacted during construction activities and after construction, however, the east side of the study area will be permanently be impacted. A huge potential impact on water quality will also arise on the east side of the study area during the construction phase and after construction phase as the east side of the study are is within the 1;100-year flood-line. However, the nearest surface water is outside the 1;100-year flood-line from the proposed site.

No groundwater was encountered at any of the test pits.

Impacts surrounding ground and surface water quality on the east side of the study area/ proposed area.

Table 5. Impacts surrounding ground and surface water quality on the east side of the study area/ proposed area.

ISSUE:	GROUND AND SURFACE WATER QUALITY	
Project Phase	Construction and Operation	
Impact	Pollution of Surface and Ground Water systems	Health Impacts
Probability	Likely	Unlikely
Degree to which impact cannot be reversed	Low	Medium
Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	High	Medium
Significance Pre Mitigation	High (-ve)	Low (-ve)
Significance Post Mitigation	High (-ve)	Low (-ve)

Degree of Mitigation	Not Mitigated	Moderately Mitigated
Nature	Negative (direct)	Negative (indirect)
Extent	Local	Local
Duration	Short Term	Medium Term

Recommended Mitigation

The following measures should be adhered to to limit the impact of the construction phase on the quality of water in the area:

Construction

No construction within the 1: 100 year flood line

No mixing of concrete to occur within 1: 100 year flood line

Appropriate containment structures to be provided;

No construction activities to occur on the eastside of the study area/ proposed area;

No concrete batching to occur directly on the ground;

All fuel storage to be appropriately bunded;

Plant to have drip trays to contain any potential leakages of fuels and oils; and

Ablutions for construction workers.

Operation

All sewerage to be transported within the municipal sewer systems; and

Pump stations to have backup facilities and 24-hour emergency storage.

POTENTIAL FLOODING

If managed correctly the construction activities onsite are unlikely to increase the potential for flooding in the area expect on the east side of the study area/ proposed

area. Once complete, the development will cause an increase in hard standing areas, such as roads, houses, roofs on the east side of the proposed area. This will result in an increase in the volumes of storm water, which may lead to localised flooding. It is planned that the proposed development will direct storm water off-site thereby minimising the potential for flooding. However, this assumes that storm water management is adequately addressed in the design. It should be noted that the potential flooding will occur on the east side of the proposed area as the area is within the 1: 100-year flood line.

Recommended Mitigation

On-site measures to attenuate peak flood discharge. This could be achieved through on-site water detention, grass-line swales, storm water infiltration systems, landscaping or a combination of the various areas. No development within 100-year flood line boundary as per the National Water Act (1998).

AIR QUALITY

The clearing of vegetation in preparation for construction exposes the soil to dust which increases the Particulate Matter concentration in the atmosphere. PM is documented as contributing to respiratory tract infections, especially in rural areas much like the proposed site. Furthermore, heavy construction vehicles will be required during construction of the development. This could impact on air quality by pollution through exhaust emissions, as well as dust created by vehicles and the construction plant.

Table 7: Impacts surrounding the quality of air

ISSUE:	**AIR QUALITY**	
Project Phase	Construction	
Impact	Atmospheric pollution	Public Health
Probability	Likely	Likely

Degree to which impact cannot be reversed	Medium	High
Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	Low	Medium
Significance Pre Mitigation	Low (-ve)	Medium (-ve)
Significance Post Mitigation	Low (-ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Easily Mitigated
Nature	Negative (direct)	Negative (direct)
Extent	Local	Local
Duration	ShortTerm	Short Term

Recommended Mitigation

Vegetated areas should not be cleared prematurely and exposed soil surfaces should be monitored, so not to further contribute to dust levels;

Unnecessary clearing of vegetation to be always avoided;

Dust suppression plan should be implemented.

BIODIVERSITY

The biodiversity studies found the Grassland Biome and the Savanna Biome was deemed natural grassland that are considered high sensitive and should be excluded from development as far as possible. The site has not undergone transformation from its perceived natural state except small excavated areas. With regards to flora, there are no known red data species or significant indigenous vegetation on-site or within the project area, however upon when clearing commences these may be revealed.

Table 8. Impacts on Biodiversity

ISSUE:	**BIODIVERSITY**	
Project Phase	Construction and Operation	
Impact	Impacts to Vegetation Types of Conservation Importance	Vegetation Impacts
Probability	Likely	Definite

Degree to which impact cannot be reversed	Medium	Medium
Degree to which Impact may cause irreplaceable loss of resources	Not Replaceable	Moderately Replaceable
Confidence level	High	High
Significance Pre Mitigation	Low (-ve)	Medium (-ve)
Significance Post Mitigation	Low (-ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Easily Mitigated
Nature	Negative (direct and indirect)	Negative (direct)
Extent	Site	Site
Duration	Long Term	Long Term

Recommended Mitigation

Care be taken to conserve the natural grassland in this proposed area through a management plan and through the implementation of the mitigation measures proposed in this specialist report.

EMPLOYMENT

The construction of the proposed development is likely to provide short term employment for casual labourers in the surrounding informational residential settlement. This may lead to increased skills development through contractor training. This is a positive impact of the project on employment in the surrounding area.

Table 9: Employment.

ISSUE:	**EMPLOYMENT**	
Project Phase	Construction	
Impact	Job Creation	Construction Workers
Probability	Highly Probable	Probable
Degree to which impact cannot be reversed	Low	Low
Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	Medium	Medium
Significance Pre Mitigation	Low (+ve)	Medium (-ve)
Significance Post Mitigation	Medium (+ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Easily Mitigated
Nature	Positive (direct and indirect)	Negative (direct)
Extent	Regional	Local
Duration	Short Term	Short Term

Recommended Mitigation

Contractors should be encouraged to source labour from surrounding areas; and

External construction workers should be housed in secure camp and are to abide by rules of the EMP to prevent public disruption (i.e. Spread of HIV/AIDS, crime, public disturbance).

LAND USE

The proposed development will result in a change in land use, with some loss vegetation. However, it will impact positively on the current housing shortage within the CoMLM area because it will aim to address the number of informal settlements as well as providing housing to previously disadvantaged individuals who cannot afford houses.

Table 10: Impacts surrounding the establishment of Housing

ISSUE:	**LAND USE**	
Project Phase	Operation	
Impact	Provision of Housing	Community Upliftment
Probability	Definite	Probable
Degree to which impact cannot be reversed	Low	Low
Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	High	Medium
Significance Pre Mitigation	Medium (+ve)	Low (-ve)
Significance Post Mitigation	High (+ve)	Medium (-ve)
Degree of Mitigation	NA	NA
Nature	Positive (direct)	Positive (direct and indirect)
Extent	Local	Local
Duration	Long Term	Long Term

VISUAL AND NOISE

The proposed development will impact on the environment both visually and through limited noise pollution. The project site is currently adjacent to a residential and industrial area and therefore the construction of the development will disturb the landscape to a limited extent. Noise levels are expected to rise during the construction phase of the development. Construction activities that causes noise include vehicle trafficking, generator noise, pressure hammers and construction worker's voices, etc. These noise levels are not assessed to be a nuisance to adjacent residents and communities.

Recommended Mitigation

Noise

Designated working hours;

Silencers on plant, construction vehicles and equipment; and

Location of construction workers camp.

Visual

Ensure site is maintained in a cleanly fashion;

Construction completed on time;

Site vegetation correctly according to rehabilitation guidelines stated in the EMPr; and

Construction waste is not to enter the biophysical or socio-economic environment. Contractors to produce waste management plans to mitigate potential impacts.

Table 11. Noise and Visual Impacts

ISSUE:	**NOISE AND VISUAL**	
Project Phase	Construction	Construction and Operation
Impact	Noise	Visual Impacts

Probability	Highly Probable	Highly Probable
Degree to which impact cannot be reversed	Medium	Medium
Degree to which Impact may cause irreplaceable loss of resources	Medium	Medium
Confidence level	Medium	Medium
Significance Pre Mitigation	Low (-ve)	Medium (-ve)
Significance Post Mitigation	Low (-ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Moderately Mitigated
Nature	Negative (direct)	Negative (direct)
Extent	Site	Site
Duration	Short Term	Long Term

HEALTH AND SAFETY

The proposed development has minimal potential to create a health and safety risk for neighbouring residents from the community. The construction of the development does pose a health and safety risk to construction workers. This can be mitigated with the correct implementation of a health and safety plan to be developed by the contractor.

Table 12: The mitigation with the correct implementation

ISSUE:	**SAFETY**
Project Phase	Construction

Impact	Construction Workers	Public
Probability	Highly Probable	Probable
Degree to which impact cannot be reversed	Low	Low
Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	Medium	Medium
Significance Pre Mitigation	Medium (-ve)	Low (-ve)
Significance Post Mitigation	Low (-ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Easily Mitigated
Nature	Negative (direct)	Negative (direct and indirect)
Extent	Site	Local
Duration	Short Term	Short Term

Recommended Mitigation

Public

Site demarcated and access to public is to be prohibited;

Safety and informative signage to be erected;

Off-site movement of construction vehicles to adhere to rules of the road; and

Pedestrians have the right of way.

Construction Workers

To adhere to on-site Health and Safety guidelines; and

A health and safety plan is to be developed and implemented as soon as land clearing commences.

SOLID WASTE POLLUTION

The construction phase of the development is likely to generate waste from clearing of vegetation, builder's rubble, general construction refuse and minor hazardous waste including paint tins, cleaning acids, asphalt's and oils. The development could therefore impact on the environment by generating solid waste pollution. The contractor and developer should ensure that all the waste generated by the development is appropriately disposed of at the recommended waste disposal sites close to the area. During the operations phase, Municipal waste management will service the proposed residential area. The licensed Waste Disposal Site is nearby the proposed development and has sufficient capacity to deal with waste produced on the proposed township development

Table 13: Impacts surrounding Solid Waste

ISSUE:	**SOLID WASTE POLLUTION**	
Project Phase	Construction	Operation
Impact	Construction Waste	General Waste
Probability	Highly Probable	Highly Probable
Degree to which impact cannot be reversed	Medium	Medium

Degree to which Impact may cause irreplaceable loss of resources	Low	Low
Confidence level	Medium	Medium
Significance Pre Mitigation	Medium (-ve)	Medium (-ve)
Significance Post Mitigation	Low (-ve)	Low (-ve)
Degree of Mitigation	Easily Mitigated	Easily Mitigated
Nature	Negative (direct)	Negative (direct and indirect)
Extent	Regional	Regional
Duration	Short Term	Long Term

Recommended Mitigation

Construction Waste

To be removed from site promptly and deposited at permitted landfill site;

No construction waste should enter the surrounding environment; and

No cleared vegetation to be burnt on-site.

General Waste

Waste to be collected regularly by municipality and deposited at permitted landfill site;

CoMLM to develop an Integrated Waste Management Plan;

Roads design to cater for refuse collection trucks; and

No waste should enter the surrounding environment.

HERITAGE RESOURCES

No features of cultural, historical or heritage significance or buildings/structures/graves greater than 60 years old were identified at the project site during the site visit. Therefore, the proposed development should not impact on the heritage resources of the area.

Table 14: Issues related to Heritage Resources

ISSUE:	HERITAGE
Project Phase	Construction and Operation
Impact	Heritage Resources
Probability	Unlikely
Degree to which impact cannot be reversed	N/A
Degree to which Impact may cause irreplaceable loss of resources	N/A
Confidence level	Medium
Significance Pre Mitigation	N/A
Significance Post Mitigation	N/A
Degree of Mitigation	Easily Mitigated
Nature	Neutral
Extent	Site
Duration	Short Term

Recommended Mitigation

No heritage resources were identified on site and therefore no mitigation measures are required. Should any artefacts, graves or features that may be of heritage value be excavated during the construction phase, work must stop and the heritage agency is to be notified immediately. Work may only commence once approval is given from the heritage agency.

Cumulative Impacts

The following cumulative impacts could be associated with a development of this nature.

Social

A development of this nature will cumulatively impact on the number of informal settlements, address the current housing shortage and will also create jobs throughout the construction and operation phases. It is essential to weigh the negative versus the positive impacts to obtain an overall cumulative social impact.

Table 15: Cumulative impacts on society

Issue	Impact	Significance Post mitigation	Interaction Opportunity	Significance of cumulative impact
Social Issues	Provision of Jobs	Low (+ve)	It is highly likely that these impacts will interact during either the construction phase, the operational phase or both.	Due to the location of the site it is not anticipated that the cumulative impact will be significant. Rather it is expected that the significance of the impact will be Medium (+ve).
	Provision of Housing	High (+ve)		
	Community Upliftment	Low (+ve)		
	Noise	Low (-ve)		
	Construction Workers	Low (-ve)		

14. ASSUMPTIONS AND KNOWLEDGE GAPS

The following assumptions and knowledge gaps have an influence on the assessment of the impacts in the EIA:

Site investigations and consultation with the Township community did not provide any evidence of sensitive heritage resources. It is therefore assumed that the site does not contain any resources of heritage value. However, there may be sensitive heritage resources subsurface which will only be discovered once excavations commence. Should this be the case the correct procedure would be to contact the responsible provincial and national heritage authorities;

All information provided by the applicant and the appointed specialist consultants was correct and valid at the time it was provided;

The EAP does not accept any responsibility in the event that additional information comes to light at a later stage of the process.

SUMMARY OF FINDINGS AND RECOMMENDATIONS OF SPECIALIST REPORTS

1. **Terrestrial Biodiversity Assessment**

Finding

The proposed development site is classified as a Terrestrial Critical Biodiversity Area Level 2 in which any further modification of these vegetation types should be limited. Furthermore, according to the North West Biodiversity Sector Plan (2015), residential uses are generally not compatible with land management of Protected Areas, CBAs or ESAs, and should only be considered subject to the necessary authorisations.

On the basis of the Red Data plant species recorded in the 2626DC quarter degree square grid, it is concluded that there are no threatened plant species that are likely to occur on the proposed township development area, however, there is one Near Threatened species that could occur on site as well four Declining plant species that may also occur there.

Conclusion/Recommendation

Although this site is considered Endangered, it is unlikely that it can be used for specific protection of the environmental due to the low likelihood of the occurrence of species of conservation importance, and its transformation due to the current activities.

According to the North West Biodiversity Sector Plan (2015), residential uses are generally not compatible with land management of Protected Areas, CBAs or ESAs, and should only be considered subject to the necessary authorisations. It is thus very important that the mitigation hierarchy be implemented in full

2. **Traffic Impact Assessment**

Finding

The affected intersections have been analysed for the full development potential using aaSIDRA traffic analysis software. SIDRA is a computer software program that provides several performance measures including v/c ratios, delays, level of service (LOS), etc.

When elements of a road network such as intersections are analyzed, their operating conditions are described in terms of LOS. The six letters from A to F are used to indicate different LOS. LOS A indicates very light traffic with correspondingly low delays. LOS E reflects capacity conditions, with high delays and unstable flow. LOS F reflects conditions where traffic demand exceeds capacity and traffic experiences congestion and delays. Generally, LOS A to D is considered acceptable in accordance with international standards. LOS E and F on the other hand are deemed unacceptable

Conclusion/Recommendation

Based on Traffic Engineer site observations, the existing and base traffic volumes shown in the figures, as well as the capacity analysis, it is concluded that the proposed development will have some traffic impact on the external road network taking cognisance of the Latent Rights Development traffic of Kanana Ext 16, Jouberton Ext 34 and Jouberton Ext 31.

3. Geotechnical Assessment

Findings

The detailed descriptions of the soil profiles encountered in the test pits are presented in Appendix B; while the geological profiles are summarised below for the whole site, based on the soil profiles. The geological profiles as recorded in test pits are summarised below. The geotechnical investigation revealed that the profile across the site is uniform, comprising of the following horizons: Transported, Pedogenic, Residual Agglomerate and Agglomerate bedrock.

No adverse conditions prohibiting the construction of structures for residential development were encountered at the site.

Recommendations

The site preparation requirements identified below are aimed at preparing foundation, removal of any unsuitable materials and densification of the ground. The presence of clay material below transported material may lead to significant differential settlement and cracking or distortion of structures.

Construction of a soil raft entails the following: • Strip all topsoil, vegetation and organic soils and stockpile. This material could be used for landscaping, but is not suitable for use as engineered fill. • Remove the in-situ material in an area 1 m wider than the footprint of the structure to a depth of 1.5 m. The excavation must be battered at a slope of 60° Stockpile this material separately for potential re-use for landscaping. • Backfill

the excavation in 150 mm thick layers with G6 quality materials (in accordance with TRH14) in maximum 0.15 m layers (loose spread) and compacted to not less than 98% Mod AAHSTO density within 2% of OMC. The residual material encountered on site is not considered suitable for this purpose. • concrete raft foundations should be placed at a shallow depth (0.5 m) in the soil raft.

The site is considered suitable for the proposed development provided that the recommendations made in this report are adhered too.

4. Heritage Impact Assessment

Finding

On the given land parcel, there are no recognized sites, and none were found during the ground truthing exercise. Ongoing residential, and related operations have recently had a significant impact on and disrupted the environment. This includes widespread informal habitation covering the majority of the study area and development footprint. Disturbed and exposed layers were investigated. Such activities may possibly have cleared off archaeological remains within the project area (if any existed) that may be buried underneath the soil and be brought to the surface by human activities.

Therefore, at the time of the archaeological survey, archaeological sustainability and visibility would have been compromised. The impact types most commonly observed are alteration, transfer, and removal. This area has been heavily disturbed by the previous developments. Soil, clay, and sand were removed down to the level of bedrock especially during the road networks construction. Due to erosion and other human activities, it is almost impossible that archaeological artefacts may still exist along the road reserve.

Conclusion/Recommendations

While the graves yards were identified, it was noted that the graveyards fall-out of the proposed development boundaries/footprint. Within the proposed development footprint, no other heritage resources were recorded or identified.

In the event that any cultural heritage resources are discovered during and after the construction phase, operations exposing archaeological and historical residues, including modern graves, should cease immediately pending an evaluation by the heritage specialist. A Chance Find Procedure should be implemented for the project should any sites be identified during the construction process.

A qualified archaeologist should be contracted to conduct an archaeological induction on site before construction begins. The archaeologist should also monitor the project during the construction phase and submit periodic archaeological Watching Briefs to the Provincial Heritage Authority at regular intervals (monthly intervals recommended).

The developer may not extend the scope of works beyond the given proposed boundaries. In the event that the scope of works extends beyond the given boundary another heritage assessment should be carried out

15. ENVIRONMENTAL IMPACT STATEMENT

Need and Desirability

In 2004, the Department of Housing declared the desire to eradicate informal settlements in South Africa by 2014 following the unprecedented housing backlog, proliferation of informal settlements, social exclusion and the inability of municipalities to provide basic infrastructure to the urban poor households.

Housing and service delivery is a key challenge facing the CoMLM Local Municipality (MLM). According to CoMLM Integrated Development Plan (2017 – 2022) different communities in ward 3, 4, 5 and 7 set out their needs during the public participation process. The community need for different wards in Marikana area include the following

- Land and Housing;
- Electricity;
- Water and sanitation;
- Roads and storm water;
- Social services; and
- Local Economic Development.

In terms of the Municipal Systems Act 32 of 2000, all municipalities (i.e. metropolitan, district and local) must undertake an Integrated Development Plan (IDP) process to produce IDPs. As the IDP is a legislative requirement it has a legal status and it supersedes all other plans that guide development at local government level. The provision of integrated and sustainable human settlements is listed as one of the strategic objectives of the Municipality's IDP, which means that housing must be accompanied by the provision of other services and amenities required to improve the socio-economic conditions of the residents of that area (i.e. access to community

facilities such as educational, entertainment, cultural, health, sports and welfare services).

The area was identified in the CoMLM IDP as a restructuring zone for social housing and was identified as a precinct where residential expansion needs to take place

Positive and Negative Impacts

The Scoping and EIA phases of this project have not identified any fatal flaws which should prevent the project from proceeding except the east side of the proposed area.

Positive direct impacts include job creation and community upliftment. Furthermore, the development will address the shortage of formal housing in the Kanana area.

Positive indirect impacts include utilising the 'undetermined' open area of land for the betterment of the community, instead of leaving it vacant and at the mercy of land invaders, therefore creating future problems for the Biophysical and Socio-economic environment. Post mitigation negative impacts discussed in this report are all rated as Low Significance.

Alternatives

Portion 100 of the Nooitgedacht 434 IP is proposed by the City of Matlosana Local Municipality (CoMLM) as a suitable location for the proposed Township development for several reasons. The Portion is near the semi formal and informal settlement where the residents who are to be relocated are currently living. The land is municipal property and will not require a lengthy/costly process of land acquisition. The area is not located within the dolomitic area.

Due to the limited land availability for development in the area, no other site alternatives are proposed as part of this application. As most of the housing recipients work in the areas close to the site, relocation elsewhere in the CoMLM is not considered to be a suitable alternative for the residents given the socio-economic and logistical factors involved.

16. EAP's OPINION ON AUTHORISATION OF ACTIVITY

Given the low significance of the negative impacts of the project and the positive impacts associated with a development of this nature, it is the EAP's opinion that CoMLM be allowed to develop the land parcel according to the design considered in this EIA. Development should however be conducted in accordance with the recommendations given in this EIAR. However, the EAP opinion is that the east side of the proposed area should not be developed due to the wetland.

17. RECOMMENDATIONS

The Environmental Impact Assessment (EIA) process for the township has been undertaken in accordance with the EIA Regulations published in Government Notice No. R. 982 of 2014 in terms of Section 24 (5) of the National Environmental Management Act (Act No 107 of 1998) (as amended). To ensure that the activity is implemented in an environmentally responsible and sustainable manner, all applicable legislation has been considered during the assessment. The provisions in applicable legislation informed the identification and development of appropriate management and mitigation measures that should be implemented to minimise potentially significant impacts associated with the project.

The conclusions of this EIAR including comments and concerns from Interested and Affected Parties (I&APs), are because of a comprehensive EIA study. These studies are based on issues identified in the Environmental Scoping exercise as well as the public participation process.

The following Recommendations are deemed necessary by the EAP and should be included as conditions in an Environmental Authorisation:

- In terms of design, surfaced roads should be enforced on flat slopes;
- No development to take place within 100-year flood line boundary, especially on the east side of the proposed site.
- Any sites of heritage significance discovered during the construction phase to be reported to the responsible heritage authority and all work in the vicinity of the find must stop. Work may only recommence on approval of the authority;
- No occupation of houses to take place until the required sewerage infrastructure and pump station are in place;
- The EMP for the construction phase must be completed with DEDECT conditions and requirements and signed by CoMLM, and the relevant contractor as implementing agents; and
- The EMP should be audited by a suitably qualified Environmental Control Officer. Audits should be undertaken, at least, monthly for the period of the construction and three (3) months after the construction is complete. Environmental audit report should be submitted to the DEDECT on monthly basis.

18. CONCLUSIONS

This report details the findings of the Environmental Impact Assessment Report (EIAR) undertaken as part of the legislated EIA process for the proposed development on the proposed area.

This EIAR will be submitted to the DEDECT for review and approval. Registered I&AP's will be further notified upon DEDECT's decision which will be distributed to all registered I&AP's on receipt of the Environmental Authorisation, should one be granted.

19. REFERENCES

City of Matlosana Local Municipality: Integrated Development Plan (2017 -2022)

DEAT, 2002: Scoping, Integrated Environmental Management, Information Series 2, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

DEAT, 2005: Guideline 3: General Guide to the Environmental Impact Assessment Regulations, 2005, Integrated Environmental Management Guideline Series,

Department of Environmental Affairs and Tourism (DEAT), Pretoria. DEAT, 2005: Guideline 4: Public Participation in support of the EIA Regulations, 2005

Integrated Environmental Management Guideline Series. Department of Environmental Affairs and Tourism (DEAT), Pretoria.

Guideline 5: Assessment of Alternatives and Impacts in support of the Environmental Impact Assessment Regulations, 2006. Integrated Environmental Management Guideline Series, Department of Environmental Affairs and Tourism (DEAT), Pretoria.

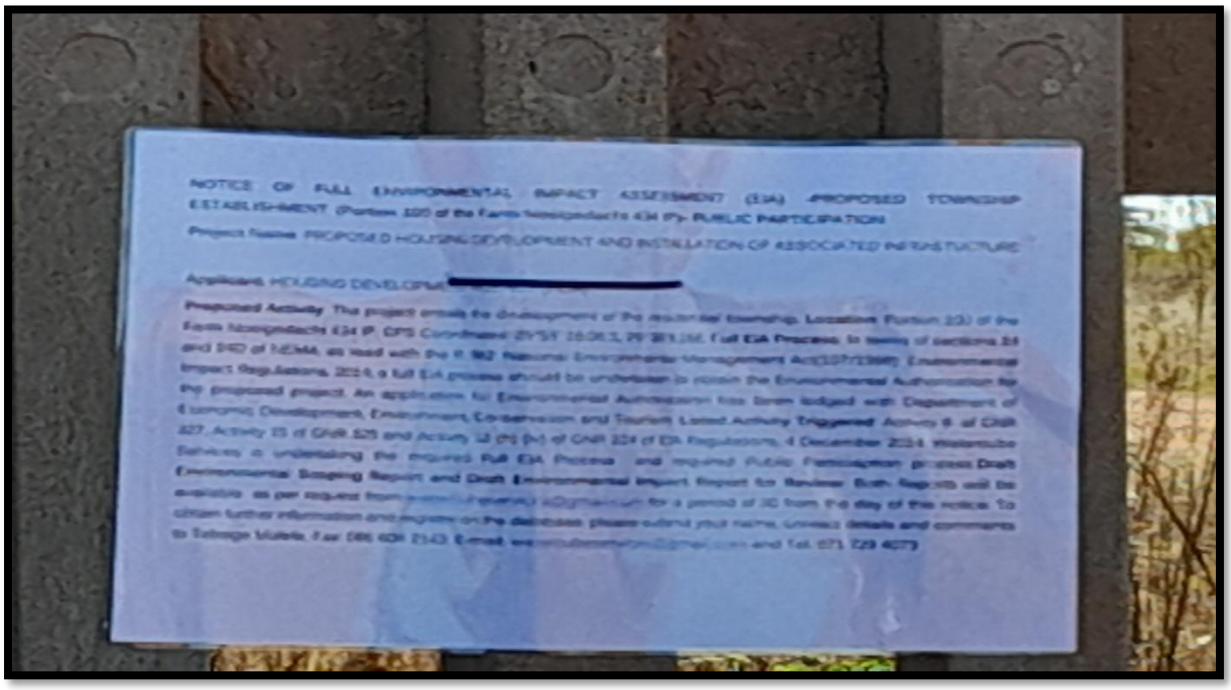
Geowave Consulting, June 2020: Geotechnical Investigation

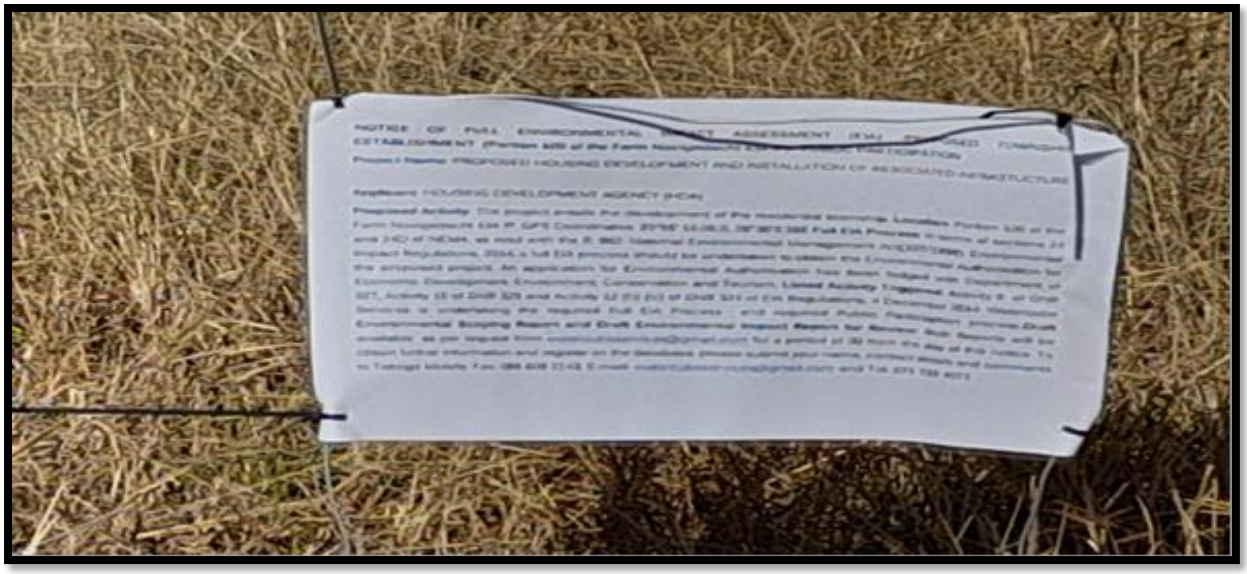
CivilConsult Consulting Engineers, October 2020: Service Report

APPENDIX A: LAYOUT PLAN

APPENDIX B: SITE PICTURES

APPENDIX C: PROOF OF NEWSPAPER ADVERT AND SITE NOTICE





APPENDIX D: COMMENTS AND RESPONSES FROM INTERESTED AND AFFECTED PARTIES

No comments were received from Interested and Affected Parties except Case Officer from DEDECT (See attached the letter from DEDECT)

Comments by Interested and Affected Person/s	Response by the EAP
Comments by the DEDECT Case Officer: Ms T. Makuwa	
2 (a)	The Terrestrial Biodiversity Assessment Report included as Appendix E of the draft Environmental Impact Assessment Report (EIAR) have the name of the compiler and name of the company
2 (b)	The listed activities included in this draft EIAR are like the listed activities indicated in the application form
2 (c)	This report is properly number and referenced, The Draft EIAR is compiled professionally and orderly
2 (d)	The motivation for all specialist studies that were identified by the Environmental Screening tool but were not undertaken is included in this draft EIAR
2 (e)	The Heritage Impact Assessment was undertaken and included in the EIAR
2 (f)	The declaration forms will be submitted with the Final EIAR

2 (g)	The only comments received are from DEDECT Case Officer: Ms T. Makuwa and they will be addressed in this draft EIAR.
3	Noted and the Applicant was informed, however, it should be noted that there is pressure from the community
4	Noted. We are available to provide additional information, however, the additional information will be communicated to the Applicant prior to us responding.

Comments by Interested and Affected Person/s	**Response by the EAP**
Comments by the DEDECT Case Officer: Ms T. Makuwa (received with a letter dated 03/02/2023 and signed by Mr. Robert Nemanashi)	
1	Noted
2 (a)	A detailed project description that indicated all components of the proposed development and associated land uses was included in the final Environmental Impact Assessment Report. See page 25 and 26 of this final Environmental Impact Assessment Report.

2 (b)	This final EIAR considered alternatives as required by the EIA Regulations. See page 44 and 45 of this final EIAR.
2 (c)	Ditsamai Investments and Projects (Town Planners appointed by City of Matlosana Local Municipality and Housing Development Agency) has confirmed that the current zoning of Portion 100 of the Farm Nooitegdacht 434 IP is undetermined, however, the process of zoning Portion 100 of the Farm Nooitgedacht 434 IP will be undertaken when the proposed Township is declared. Therefore, Listed Activity mentioned will not be included. We as the appointed Town Planning firm by the Housing Development Agency (HDA) to undertake the establishment of a township situated on A PART OF PORTION 100 OF THE FARM NOOITGEDACHT 434 IP can confirm the following: The urban edge is a spatial concept that includes the current development, new township establishments as well as vacant land that will provide sufficient potential for public and private sector

	development for the medium term. The proposed Kanana Extension 17 falls within the Urban Edge as part of the Municipal SDF demarcations, therefore the proposed development complies with the Municipal policy guidelines being the SDF. See attached letter.
2 (d)	The North West Biodiversity Sector Plan, 2015 was expanded and the implication of the proposed development in this final EIAR. See page 40 of this final EIAR.
2 (e)	The Engineering Report including the annexures are attached to the final EIAR. See Appendix E.
2 (f)	The Environmental Management Programme (EMPr) is correctly referenced.
2 (g)	The Declaration of interest forms (original forms) are completed, signed and attached.
2 (h)	Noted. We are available to provide additional information, however, the additional information will be communicated to the Applicant prior to us responding.

APPENDIX E: SPECIALIST STUDIES (BIODIVERSITY ASSESSMENT STUDY, GEOTECHNICAL INVESTIGATION, SERVICE ENGINEERING AND TRAFFIC IMPACT STUDY, HERITAGE IMPACT ASSESSMENT STUDY)

APPENDIX F: SPECIALIST DECLARATION OF INTERESTS

APPENDIX G: ENVIRONMENTAL MANAGEMENT PROGRAMME (EMPr)

APPENDIX H: MOTIVATION FOR ALL SPECIALIST STUDIES THAT ARE NOT UNDERTAKEN

APPENDIX I: LETTERS FROM MUNICIPALITY AND TOWN PLANNERS