



SCOPING REPORT

FOR

**THE PROPOSED TOWNSHIP DEVELOPMENT AND ITS ASSOCIATED
INFRASTRUCTURES ON PORTION OF THE FARM BELLEVUE 74 LT,
SITUATED AT KAWAYENI VILLAGE, WITHIN THE JURISDICTION OF
MAKHADO LOCAL MUNICIPALITY UNDER VHEMBE DISTRICT IN LIMPOPO
PROVINCE.**

REPORT PREPARED FOR:

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Role and competence of the EAP

The role for Environmental Assessment Practitioner is responsible for managing, planning and coordinating various environmental management instruments such as Environmental Impact Assessment and Environmental Management Programme report (EMPr). Plantago Lanceolata (Pty) Ltd will determine the level assessment applicable to proposed activity.

Plantago Lanceolata will prepare and submit application to the competent authority. Mr Divhani Mulaudzi has expertise in conducting environmental impact assessments, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.

Mr Divhani Mulaudzi signed agreements and Plantago Lanceolata has been appointed by Latterman transport and project (Pty) Ltd as an independent EAP the proposed project as required in terms of the EIA regulations.

Table 1: Details of the Applicant

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Author: Mr. Divhani Mulaudzi

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Town and Regional Planner: MS funani Tshivhase

Ecological Specialists: Mr. Mokgatla Molepo

Table3: List of abbreviations

BID	Background Information Document
CA	Competent Authority
EAP	Environmental Impact Assessment
EIR	Environmental Impact Report
EMPr	Environmental Management Programme and Report
GNR	General Notice Regulation
I&APs	Interested and Affected Parties
IDP	Integrated Development Plan
PPP	Public Participation Process
S&EIR	Scoping and Environmental Impact Report
IEM	Integrated Environmental Management
LIRA	Limpopo Heritage Resource Agency
LEDET	Limpopo Economic Development Environment and Tourism
DWS	Department of Water and Sanitation
DEA	Department of Environmental Affairs
DEFF	Department of Environment, Forestry and Fisheries
DMRE	Department of Mineral Resources and Energy

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Definition of terms

“Alternatives” in relation to a proposed activity, means different means of meeting the general purpose and requirements of the activity, which may include alternatives to the property on which or location where the activity is proposed to be undertaken type of activity to be undertaken, design or layout of the activity, technology to be used in the activity, or operational aspects of the activity.

“Environmental impact assessment” means a systematic process of identifying, assessing and reporting environmental impacts associated with an activity and includes basic assessment and S&EIR.

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

“Significant impact” means an impact that may have a notable effect on one or more aspects of the environment or may result in non-compliance with accepted environmental quality standards, thresholds or targets and is determined through rating the positive and negative effects of an impact on the environment based on criteria such as duration, magnitude, intensity and probability of occurrence.

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

Introduction

Scoping is a process of determining spatial and temporal boundaries and key issues to be address in an environmental impact assessment. It considers the description of alternatives and different approach that will be implemented for the assessment of environmental impact. Scoping it is the initial phase of Environmental Impact Assessment. Environmental Impact Assessment will be undertaken before construction emerges. A full Scoping and Environmental Impact Assessment is required for the construction of the proposed Kawayeni township development.

Latterman Transport and Project (Pty) Ltd has appointed Plantago Lanceolata (Pty) Ltd as an independent environmental impact practitioner to undertake environmental impact assessment process to determine the biophysical, social and economic impacts associated with the proposed activity. Interested and affected parties will be provided with the draft scoping report before handed over or submitted to the competent authority so that they can raise issue of concern or highlight something regarding the development, the public will review the report and submit comment to the EAP.

Scope of the development

Scope of the development for the proposed development will be used for residential area and shopping complex with its associated infrastructure. Bulk services infrastructure related to the proposed development will be attached. Currently there are no existing bulk services around the proposed site. The infrastructure that is referred to be the following:

- Estate housing development of 550 units.
- Electrical infrastructures: power connection will be required from Eskom.
- Roads: Two major access routes to the development have been proposed.
- Sewer reticulation: The proposed township establishment requires bio sewage systems for sewage purposes.
- Water supply pipeline: Water will be sourced from borehole and it will be in accordance with Makhado local municipality infrastructure standards.
- Stormwater management: It will be channelled to water catchment report for water use licence will be compiled.

The following bulk services has been proposed for Kawayeni township development

Water reticulation infrastructure

Kawayeni water reticulation network will be located along the road reserve connecting to each farm road will be designed to full township standards with surface and subsurface storm water drainage.

Table 3: summary of water requirement for the proposed development

WATER USE DOMESTIC:			
COMPONENT	NUMBER	ESTIMATED DEMAND	WATER DEMAND (kl/day)
Housing	1500	1.1kl +(75 ℓ/p/day p/p)	376.1
Others	1	150 kl	400
Estimated average		526.1kl	
Pressure	Static pressure Dynamic pressure	Max - 90m Min 25m	
Wastewater treatment requirement			

Table 4: Design overview

Design overview	
Residential	300 households
Business	19447.71 m2
Institution	9280.52 m2
Local authority	3794.52 m2
Special area	1583.31 m2
Total development area	97.4401 Hectares

Sewer reticulation infrastructure

A sewer system by famsystem Technology is proposed for this development, it is proposed that the Township Establishment requires a septic tank for sewage purposes.

Details of the tank and the famsystem Technology is included herewith as follow: It is estimated that the sewer outflow will be 80 – 90% of the water inflow. Applying this factor, the following sewer flows is derived: 1. Township establishment – 6 400 ℓ/day.

Roads

The roads are typical township roads and have been classified according to the “Road reserve widths for new residential developments within the Makhado local municipality and guidelines for human settlement planning into three different categories. Access from the development to Elim Town is via the Main road R578 adjoining a further 25 kilometre to the Kawayeni Gravel Road. The development will require additional roads infrastructures for the communities around.

Storm Water Infrastructure

Design Rainfall Data

The rainfall intensity was determined as per IDF curves. The following equation was used to determine the peak intensity of the storm for each catchment area:

$$I = a / (b + t) c$$

I = intensity (mm/hr)

a = Mean Annual precipitation (mm)

b = Constant Based on local conditions

t = Duration (minutes)

c = Constant Based on local conditions

Hydrology

The slope of the area is yet to be determined but the development shall take into consideration all factors that will be adaptive to green environmental design especially in respect to permeability of ground surfaces.

Hydraulics

The latest software from civil designer suite program, called storm, was used to undertake the analysis: The storm water run-off was determined in accordance to the rational method were:

$$Q = CIA/3.6$$

$$Q = \text{Stormwater runoff (m}^3\text{/s)}$$

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C = Runoff coefficient

I = Rainfall intensity over catchment (mm/h) (633mm/hr)

A = Effective area of catchment (km²)

The storm water runoff was checked using the following flood recurrence periods: Pipes system: 1:5 Years

Table 5: Storm water pipes design parameters

Storm water pipes design parameters	
Minimum pipes diameter	450mm
Minimum pipes class	100D
Maximum velocity of storm water run – off	Pipes 3m/s
Minimum velocity of storm water run-off	0.6m/s
Minimum slope in pipes	1%

The proposed development storm water drainage system should be able to handle infrequent severe storms (major storms) and frequent minor storms. According to CSIR (2000), the typical formal drainage system should be able to handle the minor storms and during the major storm should support the drainage system in handling the unusual storm.

Storm water design	Design parameter
Storm water system	Collection into pipe drainage system and discharged into Dam.
Recurrence interval	5 years for minor storms and 100 years for major storms
Flood calculation method	Rational method

Site description

The proposed site area is 97 ha (attached Land Surveyor diagram) of vacant land on the North side of Elim town (see Figures 1) which is easily accessed via gravel roads. The terrain is generally flat and it appears that the site has been not used in the past. Presently the surface conditions are dry with sparse vegetation, consisting of small thorny shrubs and low grass. The climate of the region can be classified as dry with very hot summers and very cold dry winters (Weinert climatic No.>10).

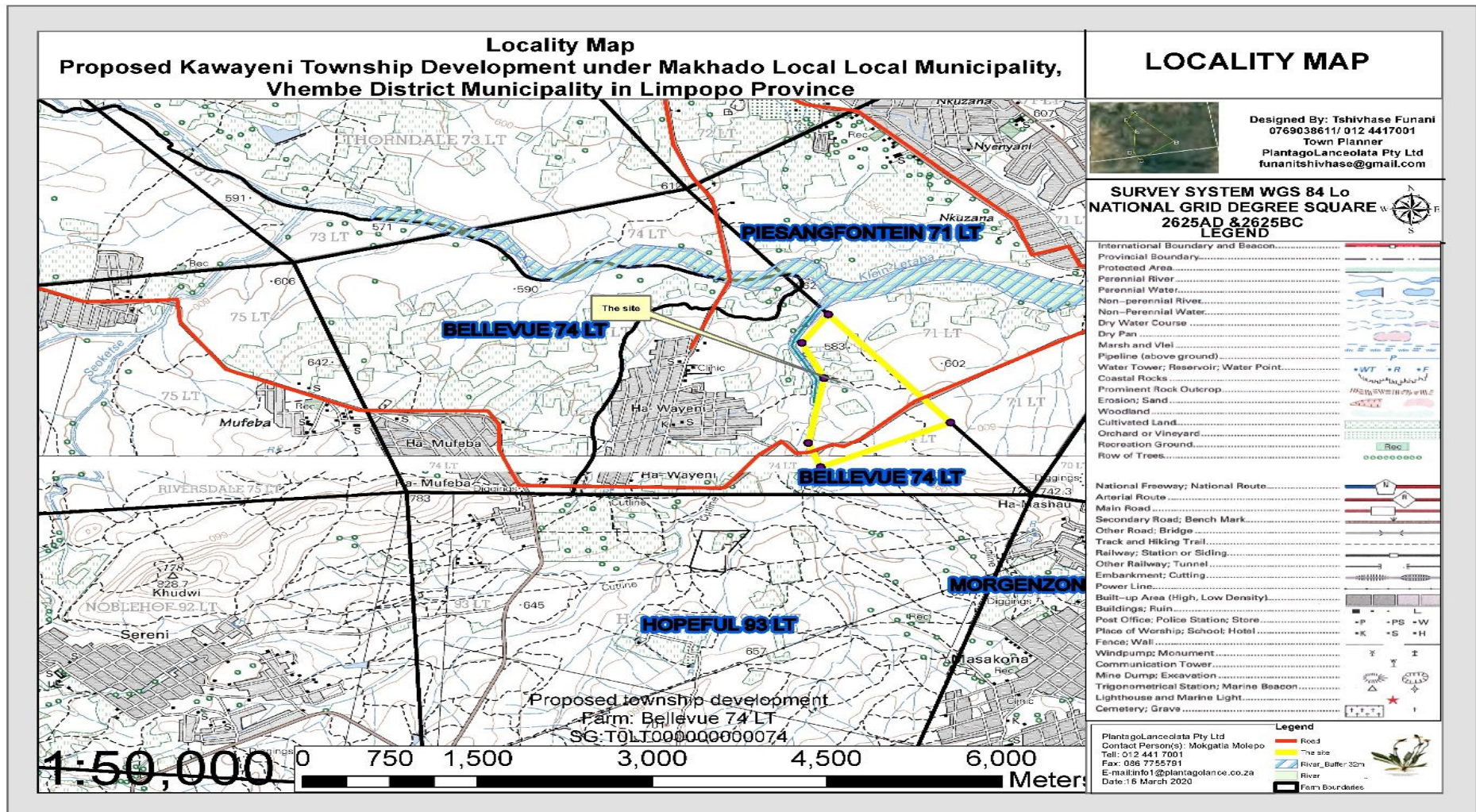


Figure 1: Locality map of the proposed township development

Description of the scope for the proposed activity

This process aim to describe all listed and specified activities that are triggered, it also describe activities and alternatives that will be conducted including associated structures and infrastructures that are in line with the proposed project.

Table 6: Description of a property

MUNICIPALITY	FARM NAME	COORDINATES		DEVELOPMENT FOOTPRINT(HA)
Makhado Local Municipality under Vhembe District	Bellevue farm 74 LT	Latitude	23°14' 37.38"	97,4401
		Longitude	30° 14' 18.05" E	

The proposed township establishment will be located at Kawayeni village on the farm Bellevue 74 LT, under Makhado local municipality, Vhembe district in Limpopo province.

GPS: LAT: 23°14' 37.38" and LON: 30°14' 18.05"

Site accessibility: can be accessed from the existing gravel road.

21 digit surveyor general code

T	0	L	T	0	0	0	0	0	0	0	0	0	0	7	4	0	0	0	0	0
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Purpose of scoping report

It serves as an initial phase of submission together with application forms for Environmental Authorisation. It is the first phase required for preparation of Environmental Impact Assessment. It highlights the decision taken during public participation, it gives opportunity for people to comment and raise issues regarding the proposed project. The primary aim for scoping report is to present key stakeholders with an overview of the project and identification of key issues to be assessed in the EIA phase.

Objectives of scoping report are the following:

- It identifies key issues to be address in the environmental impact assessment phase.
- It identifies the relevant policies and legislation relevant to the activity.
- Identify possible mitigation measures that can be applied.
- Identify the degree at which impacts can be reversed.
- Identify the degree at which the impacts can be avoided, managed or mitigated.

Motivation (need and desirability) for the proposed project

Latterman Transport and Projects (Pty) Ltd aims to establish a township that will improve the standards of living for the surrounding residents, the proposed project will influence the provision of better service delivery, it aims to improve the economy of Makhado Local Municipality and also the provincial economy will be boosted.

The following infrastructures are part of feasibility study for the proposed township development:

- Residential houses that will act as shelter and minimise informal settlement to the neighbouring village.
- Private school will minimise overcrowding of learners in public schools also it will improve high standards of learning.
- Fencing of site will minimise crime around the proposed residential houses.
- Shopping complex that will minimise the distance travelled by residents to the nearby towns to purchase their basic needs.
- Recreational areas will minimise the use of substance abuse by teens and reduce gangster activities the open space will help children to play and do their group studies.
- Minimise lack of transport around the proposed area as people will require all kinds of transportation to carry them from work and around the village.

There is a need for decent and integrated housing settlement within Kawayeni village. There is a need to provide suitable and high quality and well-maintained accommodation for local community. There is a need for a township establishment in Makhado Local Municipality as there are few shopping complex within Makhado

Local Municipality so there is a need for Kawayeni to develop a township to the surrounding areas to minimise the distance travelled by Kawayeni residents to Elim or Makhado town and to enhance the standards of living within Makhado Municipality.

Makhado Local Municipality with its Integrated Development Plan- IDP has prioritised township development as a key issue. Once the project is finished there will be low cost for Kawayeni residents to travel a long distance to town. The surrounding roads will be improved and will make it easier for travelling conditions.

The project will create employment to the surrounding residents as stated on Makhado Municipal Integrated Development Plan that currently the local economy is unable to provide sufficient employment opportunities to meet the needs of economically active population. The proposed project will provide skills to youth in the surrounding areas.

This establishment of a township will provide a mixed use development for the proposed vacant land. The proposed town will limit urban sprawl to the nearby towns within Makhado Local Municipality it will bring in economic investment, the project will create employment opportunities and providing different housing opportunities in the area.

The proposed project will contribute towards the local integrated development plan vision of seeing results from effectively coordinated spatial planning systems that aim to transform human settlements in Limpopo into equitable and efficient spaces with citizens living in close proximity to work, access to social facilities and necessary infrastructure.

Applicable legislation, policies and guidelines

In order to ensure that the proposed Kawayeni township development meet the regulation of the national environmental management act. Plantago Lanceolata (Pty) Ltd was appointed to act as an independent consultant to manage environmental authorisation application. In terms of NEMA EIA regulations of 2017 the activities triggered by the proposed development are presented in the table below:

Table 7: Activities triggered by the proposed project

GNR LISTING NOTICE	ACTIVITY NUMBER AND DESCRIPTION	PROJECT COMPONENT
GNR 325, Listing Notice 3	<p>Activity 15 (i)(ii)</p> <p>The clearance on an area of 20 hectares or more of indigenous vegetation, excluding where such clearance of indigenous vegetation is required for;</p> <p>(i)The undertaking of linear activity; or</p> <p>(ii) Maintenance purposes undertaken in accordance with a maintenance management plan.</p>	<p>The proposed project will require clearance of land of 97, 4401 ha. The applicant proposed to also landscape certain portions land parcels.</p>
GNR 327, Listing Notice 1	<p>Activity 14</p> <p>The development and related operation of facilities or infrastructure, for the storage, or for the storage and handling, of a dangerous good, where such storage occurs in containers with a combined capacity of 80 cubic metres or more but not exceeding 500 cubic metres.</p>	<p>The development and operation of filling station that will include the installation of four underground tanks that require storage of 80 cubic metres or more but will not exceed 500 cubic metres</p>
GNR 324, Listing Notice 3	<p>Activity 10</p> <p>The development and related operation of facilities or infrastructure for the storage, or storage and handling of a dangerous good, where such storage occurs in containers with a combined capacity of 30 but not exceeding 80 cubic metres</p>	<p>There will be development of filling station that will have the storage tank of petrol and diesel.</p>

List of other legislative requirements

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

The National Water Act provides the management of South African water resources. The act ensure that south Africa water resources are protected, conserved, managed, and controlled in ways which take into account amongst other factors :

- Promoting equitable access to water.
- Reducing and preventing pollution and degradation of water resources.
- Redressing the results of past racial and gender discrimination.
- Promoting the efficient sustainable and beneficial use of water in the public interest.
- Promoting dam safety and managing floods and drought
- Meeting international obligations
- Promoting the efficient, sustainable and beneficial use of water in the public interest
- Facilitating social and economic development
- Meeting the basic human needs of present and future generation
- Providing for the growing demand for water use

Developer will be required to obtain water permit for any type of water usage and disposal of waste water from the authority.

Implications for the proposed development:

- Any proposed water used must be registered or licenced.
- Waste generated during construction must be controlled adequately to prevent impact to contaminate ground and surface water.
- Developers must implement procedure for clean-up incidents that might take place during the construction.
- Any changes on drainage lines must be evaluated in terms of water use requirements.

National Environmental Management Act (NEMA) 1998 (Act No 107 Of 1998)

It provides legislative frame work for integrated environmental management in South Africa. The state that any activity that may significantly harm the environment must require authorisation by law must be assessed prior to approval. In terms of NEMA and EIA regulations 2014 application for listed activities must be submitted to the provincial environmental authority or national authority depending on the type of activity being applied for. The act ensures that the development is socially, economically and environmentally sustainable. The law set principles that apply to activities of all organ of state that may significantly affect the environment, these include the following: development must be sustainable, pollution must be avoided or minimised or remedied, negative impacts must be minimised, waste must be minimised, reused or recycled. This regulation makes the provision for the following:

- Assessment must be conducted by an independent Environmental Assessment Practitioner
- Public participation must be undertaken at various stages during the assessment process.
- The authority delegated with deciding on environmental applications respond to applications and submissions within stipulated timeframes.
- Decisions must take into account the interests, needs and values of all interested and affected parties, and this includes recognising all forms of knowledge, including traditional and ordinary knowledge.
- Environmental justice must be persuaded so that adverse environmental impacts shall not be distributed in such a manner as to unfairly discriminate against any person, particularly vulnerable and disadvantaged persons.
- Responsibility for environmental health and safety consequences of a policy, programme, project, product, process, service or activity that exists throughout its life cycle.
- The social, economic and environmental impacts of activities, including benefits and disadvantages must be considered, assessed and evaluated, and decisions must be appropriate in the light of such consideration and assessment.
- Sustainable development requires the consideration of all relevant factors including the following:

- The disturbance of landscape and sites that constitute that nations cultural heritage is avoided, or where it cannot be altogether avoided, is minimised and remedied;
- That the disturbance of ecosystems and loss of biological diversity are avoided or where they cannot be altogether avoided are minimised or remedied;
- That pollution and degradation of the environment are avoided or where they cannot be altogether, avoided are minimised and remedied;
- That waste is avoided or where it cannot be altogether avoided, minimised and reused or recycled where possible and otherwise disposed of in a responsible manner;
- That the use and exploitation of non-renewable natural resources is responsible and equitable and takes into account the consequences of the depletion of the resource;
- That what the development, use and exploitation of renewable resources and the ecosystems of which they are part do not exceeds the level beyond which their integrity is jeopardised;
- That a risk averse and cautious approach is applied, which takes into account the limits of current knowledge about the consequences of decisions and actions; 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.

Implications for the proposed development

- Activity cannot commence without required authorisation
- Scoping, environmental impact report and public participation processes will be informed by these principles
- The proposed development must be consistent with these principles

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

It aims to ensure that that waste is handled in a proper manner. It aims to protect human health and environment by providing mitigation measures to prevent pollution and ecological degradation. The act provides specific waste management measures.

It include compliance and enforcement mechanisms, it provides national waste information system, remediation of contaminated land.

Implications for the proposed development

- Waste generated during the commence of the proposed activity must be managed in accordance with the provision of the act

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

The act provides the management and conservation of South Africa's biodiversity within the framework of NEMA. The act aims to identify, protect and manage species of high conservation value. The act aims to identify, protect and manage ecosystem and biodiversity of a high value. NEMBA states that habitat loss, degradation or fragmentation must be avoided, remedied or minimised

Implications for the proposed development

- If during the site clearance you encounter Indigenous plant or animal the developer needs to quickly report to the ECO

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

The purpose of National Heritage Resource Act is to promote good management of national estate of South Africa. It promotes good government at all levels and empowers civil society to conserve their heritage resources. It establishes the South African Heritage Resources Agency together with its council to coordinate and promote the management of heritage resources at national level. The act ensures those heritages are effectively managed.

Implications for the proposed development

- Any artefacts uncovered during construction the developer needs to report the issue to SARHA
- SARHA needs to be informed about the project development and must be given the platform to comment

- No person should demolish the structure older than 60 years or disturb the grave older than 60 without the permission issued from the relevant provincial heritage authority.

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

The act provides the protection, conservation and management of ecologically viable areas representative of south Africa's biological diversity and its natural landscapes and seascapes, for the establishment of a national register of all national, provincial and local protected areas, for management of those areas in accordance with national norms and standards, for intergovernmental cooperation and public consultation in matters concerning protected areas.

The objectives of the act:

- The act promotes sustainable utilisation of protected areas for the benefit of people in a manner that would preserve the ecological character of such areas.
- To provide for cooperative governance in the declaration and management of the protective act.
- To promote sustainable utilisation of protected areas for the benefit of people, in a manner that will preserve ecological character of the area.
- To present representative network of protective areas on state land, private land and communal land
- To provide, within the framework of national legislation, national environmental management act for the declaration and management of protected areas.

Occupational Health and Safety Act 1993 (Act No 85 of 1993)

It promotes health and safety of a person at work and the protection of person in connection with activities at work. The act ensure the protection of a person and other person at work against hazardous to health and safety arising out of or in connection with the activities of persons at work; the act establish an advisory council for occupational health and safety.

Integrated Environmental Management

IEM ensures that environmental considerations are fully integrated into all stages of the development process. It aims to achieve a desirable balance between conservation and development (DEAT, 1992). The IEM guidelines intend encouraging a pro-active approach to sourcing, collating and presenting information in a manner that can be interpreted at all levels. Integrated environmental management information series guidelines are also considered during S&EIR application process.

[Table 8: Proposed kawayeni township development project schedule](#)

ACTIVITIES	DESCRIPTION	TIMEFRAME	DURATION	STATUS
Application for Environmental Authorisation, Scoping Report and Specialists studies	Application form for Environmental Authorisation, Scoping Report and Specialist Studies submission for proposed township development for Proposed Kawayeni Township Establishment	July 2020	14 days for an acknowledgement of receipt	Ongoing
Public Participation, and stakeholders engagement	Scoping Report for Public Comments.	Ongoing	I&APs are given 30 days to comment on Report	Ongoing
Final Scoping Report Submission to CA	30 day PPP incorporated	July 2020	Public participation has 30 days excluding weekend and holiday	On going
Decision from CA on the Scoping Report	Approval or Rejection of the Scoping Report	40 days	The CA has 43 days to issue out the decision.	Ongoing
Acceptance of Scoping Report				
Note: From acceptance of the Scoping Report the EAP has 106/107 days to submit the Final EIR and EMPr to the CA with PPP incorporated and specialist studies.				
Draft EIR &EMPr	PPP for Draft EIR and EMPr, thus includes the HIA study to be done and One Public Meeting	15 days after circulation of reports	The PPP will run for 30 days	Pending
Final EIR &EMPr	Submission of the final EIR and EMPr to the CA for a ROD	10 days	The CA must within 107 days of receipt of the EIR and EMPr, issue aEA/ROD.	Pending

Description of the process that needs to be followed for the preferred activity

The following process will be taken into consideration to reach the decision for the proposed development:

- The land for the proposed activity that has been identified by Latterman transport and projects (Pty) Ltd.
- The primary objective for the proposed development to improve the standard of living for the surrounding communities
- EIA including other studies that will form part of feasibility study to determine whether the project qualifies to be developed on the proposed farm.

Description of alternatives to be considered

Alternatives are different options for meeting the proposed project. It is essential that the need and desirability for the proposed project are clearly defined. Different alternatives will be identified and investigated into details during the EIA phase.

The following alternatives will be investigated:

Layout alternatives

It ensure placement of land use and infrastructure on site. It includes different architectural designs and engineering design of infrastructure services and roads. This alternative will be evaluated during the EIA phase after finalisation of specialist studies.

Site alternatives

It describes the property on which the proposal is intended and possible location for certain activities within the property. Currently no alternatives in relation to the property have been identified for the proposed development.

Scale alternatives

It refers the actual size of the development proposed and social housing components. The scale alternative will be investigated during the EIA phase after the finalisation of all the specialist studies.

Technology alternatives

It implements the use of solar; wind turbines instead of electricity to diminish or reduce the demand on the municipal electricity provision of this alternative will be considered.

Land use alternatives

It describes consideration of land uses on the development site aside from housing.

No go option

A situation where the environment is left in the present condition. No development can commence in this stage there will be no interference attempted.

Description of receiving environment

Bio-physical environment

Geology

The site geology consists of Quaternary alluvium/colluvium of unknown thickness overlying mudstone and sandstone of the Adelaide Subgroup. The alluvium is typically fine grained and consists of interbedded layers of clayey silty sand or sandy fine gravel which have been deposited on the valley floor by the action of gravity and water eroding the surrounding slopes (hill wash) and/or cyclical flooding of the riverbanks of the Wayeni river, which flows through town to the west of the site.

Soil type and rock

The soil types are fine to medium grained alluvial/colluvial soils consisting mainly of clayey silty sand or sandy fine gravel. The soil consistency is highly variable with no consistent pattern emerging from DCP tests. A pin-holed structure was noted in some near-surface horizons, indicating that the soils are potentially collapsible. No residual soil or rock was encountered in the test holes. Localized minor surficial uncontrolled fill were noted on around the site, consisting mainly of disturbed soil due to historical activity on the site.



Figure 1: photo showing soil type excavated from the test pit

Topography and slope

This Site is characterised by high points on the north, west and south side of the development and is a mountain within the development. The eastern side of the development adjacent to the gravel main road is the lowest side, the fall is in the easterly direction. The topography of the area is characterised by mountainous makeup. Most of the settlements are located on slope less than 9% and most of urbanised area is located between mountainous areas with this slope between 9%-25%.

Climate

The climate for the municipal area ranges between 18 degrees Celsius in the mountainous areas to 28 degrees Celsius in the rest of the area, with an average of 25, 5 degrees Celsius. Maximum temperatures occur during the month of January while the minimum temperatures occur in July. The main period for rainfall is January to February with an annual rainfall of 450mm in the low-lying plains to 2300mm in the Soutpansberg. The general average rainfall for the Municipal area ranges between 450mm to 800mm. The areas north of the Soutpansberg have less rainfall than the lower western foothills and central and eastern high lying areas of the mountain

itself. Higher rainfall occurs on the higher lying areas of the Soutpansberg and foothills of the mountain.

	January	February	March	April	May	June	July	August	September	October	November	December
Avg. Temperature (°C)	27	26.3	24.9	22.5	18.6	15.6	15.5	18	21.5	24.3	25.6	26.6
Min. Temperature (°C)	20.6	20.3	18.3	15.2	9.9	6.1	5.7	8.7	12.9	16.9	19	19.7
Max. Temperature (°C)	33.5	32.3	31.5	29.8	27.4	25.1	25.3	27.4	30.2	31.8	32.3	33.5
Avg. Temperature (°F)	80.6	79.3	76.8	72.5	65.5	60.1	59.9	64.4	70.7	75.7	78.1	79.9
Min. Temperature (°F)	69.1	68.5	64.9	59.4	49.8	43.0	42.3	47.7	55.2	62.4	66.2	67.5
Max. Temperature (°F)	92.3	90.1	88.7	85.6	81.3	77.2	77.5	81.3	86.4	89.2	90.1	92.3
Precipitation / Rainfall (mm)	70	54	31	22	6	3	1	1	9	22	51	56

Figure 2: table representing average climate temperature for kawayeni village

Hydrology

The river systems and dams form part of the two major systems or catchment areas, namely the Limpopo and Olifants primary catchment areas respectively comprising 85,65% and 14,35%. The major river systems in these catchment areas include the Sand and Hout river system, the Luvuvhu river system, the Little Letabariver and Nzhelele river system. It is more important for purposes of forward planning to focus on the protection status of the water source - rivers

Biodiversity & vegetation

Large areas in the Municipal are lie vacant and are largely covered by natural bushveld. Subsistence farming on the other hand occurs in areas where rural villages and traditional authorities occur, to the southeast of the study area, whilst cultivated land occurs in the western part of the study area south of the Soutpansberg. The proposed development will have a negative impact on them. Therefore, a study should also consider the fauna, flora and avifauna of the area. An unspecified number of fauna and avifauna will be forced to move out and relocate in another area. All vegetation found on the site which are is not directly falling on the targeted area, should be left undisturbed.

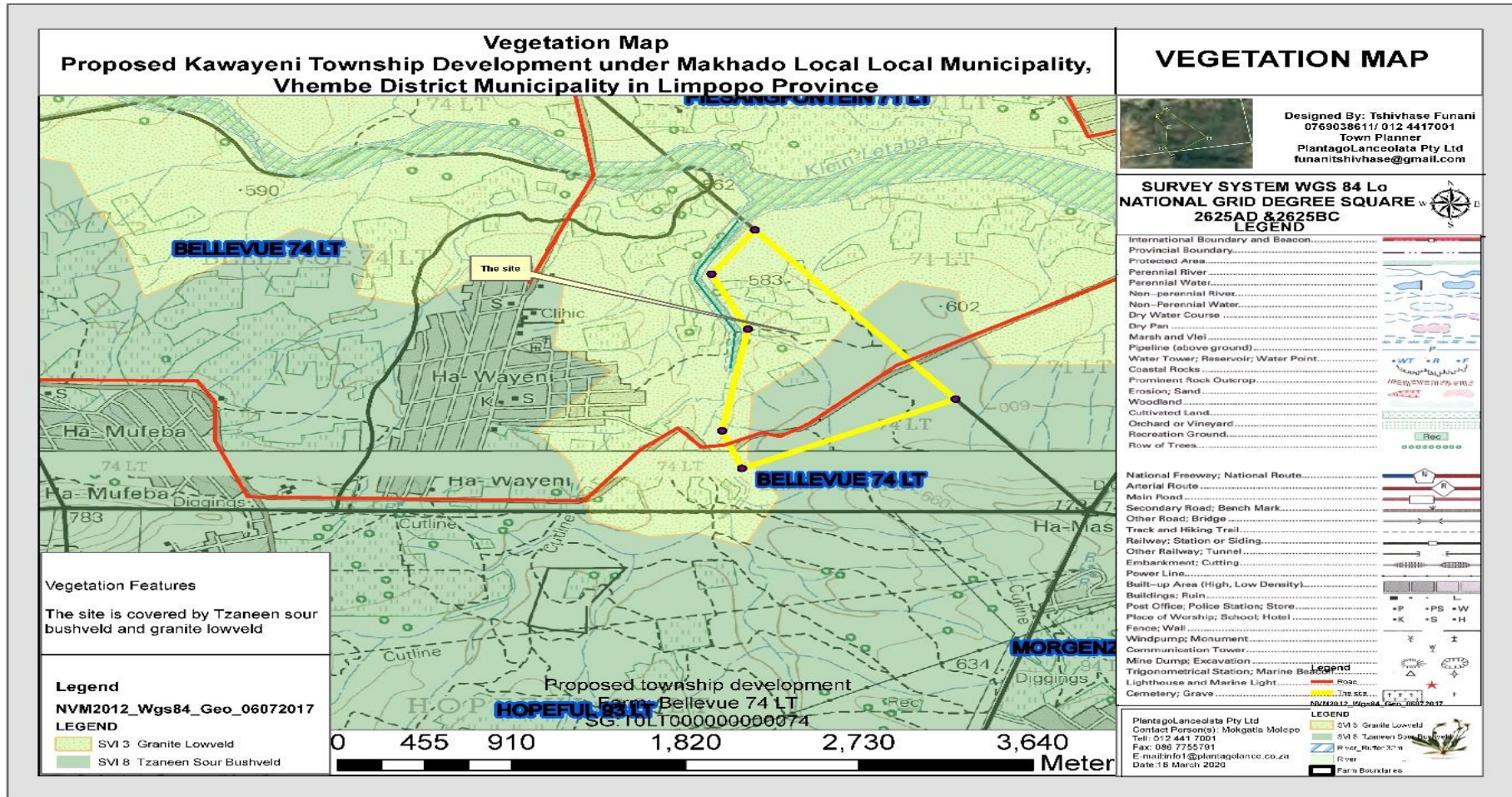


Figure 3: vegetation map

Demographic information

The total population of Makhado has decrease from 516 031 to 416 728 based on 2011 census outcome due to demarcation of municipal boundaries. The number of households have also decreased from 134 889 to 116 371 based on 2011 census outcomes. It is composed of 279 236 female and 236 795 male persons (census 2011). The population has youthful age structure and the immediate significance of this young age structure is that the population will grow rapidly in future and this implies a future high growth rate in the labour force.

Table 9: population size

Population group	Number of people
Black	406 543
Coloured	1308
Indian	1843
White	7024
Other	9
Total percentage	416 728

Table 10: Population per age

Range of gender	Number of gender
From 0-14 children	141317
15 -34 youth	15239
35- 64 adult	89154
65+ elderly	32957

Socio Economic Factors

Employment status

Job opportunities are scarce in Makhado due to few companies and business resulting in high rate unemployment. At present the local economy is unable to provide sufficient employment opportunities to meet the needs of economically active population. The population for economically active people is 46% and for economically inactive people 54% this project will help to generate employment to

the surrounding community in Kawayeni village. The project will help in skills development to the semi-skilled and unskilled local residents in Kawayeni.

Economy

The economy of Makhado is mainly boosted by agricultural activities and by the surrounding township that create direct employment opportunities to the local communities. The economy of the surrounding townships and rural areas comprises of mostly of informal activities and largely serve the immediate consumption needs of local people. Makhado local economy is very small as compared to other economies within Limpopo province (see figure below). Makhado local municipality is expected an economic boost since the proposed township development will attract business and other investment.

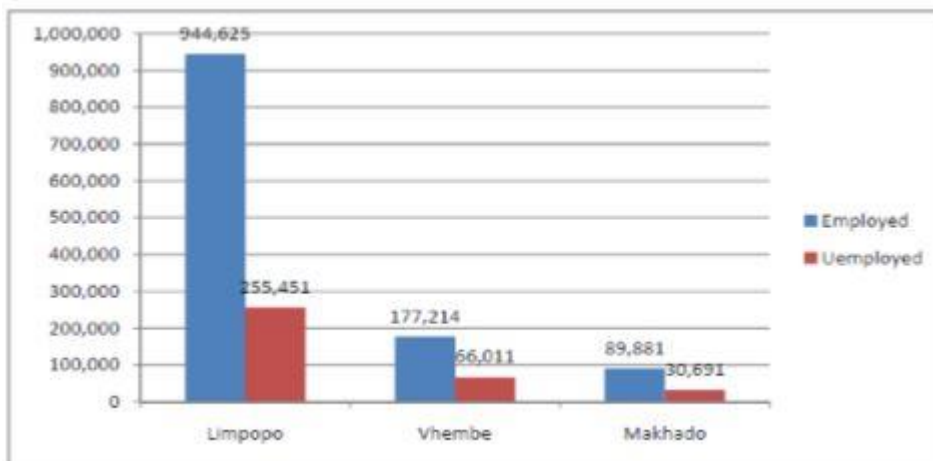


Figure 4: graph representing Makhado economy within Limpopo Province

Heritage features

A professional archaeologist will be appointed during the EIA phase to conduct a preliminary heritage impact assessment. Currently there are no known cultural sign of heritage value within the proposed site which can be affected by the proposed development.

Expected potential impacts to occur on site during construction and operational phase

Mostly all the development have environmental impacts during construction phase. The construction and operation of the proposed project development and its associated infrastructure may result in a number of potential impacts on the physical, biophysical and socio economic environment. This impact can be considered as positive, negative or neutral.

Soil

The soils are very fine grained and can be problematic in terms of compressibility or dilation under certain moisture conditions and this may affect the engineering design. The soils are easy to excavate but the fine grained nature of the soils means that they may be problematic for backfilling purposes due to their moisture sensitivity in terms of compaction.

Slope stability and erosion

The natural slope gradients are low and there are no signs of global slope instability on the site. Temporary shallow excavations are likely to be generally stable at near vertical angles due to significant cohesion in the soils but deep excavations exceeding 1.5m high should be assessed by the engineer or a geotechnical specialist, especially if a perched water table is encountered. Erosion of fine grained soil can be a problem, but due to the low slope gradients, this is unlikely to pose a significant threat.

Storm Water Management

On the proposed development currently there is no storm water management on site. If storm water management is not implemented during the construction this could negatively affect the environment such as soil erosion or disturbance of adjacent land uses. The site generally has a low slope gradient and storm water will tend to accumulate on site.

Biodiversity

Vegetation clearance may have significant may have a negative impact on the ecosystem and loss of edaphic soil this can lead to loss of species diversity and habitat characteristics. Vegetation studies will be conducted to identify the possible impacts and propose mitigation measures on the proposed development.

Topography

There will be alteration of topography due to excavations stockpiling of soil, building material, debris and waste material on site.

Air quality

Release of dust particles are expected to occur when vegetation is removed also emission of carbon monoxide from vehicle exhaust is expected to occur in the ambient air.

Storm Water Management

On the proposed development currently there is no storm water management on site. If storm water management is not implemented during the construction this could negatively affect the environment such as soil erosion or disturbance of adjacent land uses.

Waste Generation and Disposal

Solid waste is expected to be generated and if it is not properly managed or if strategic waste management is not implemented this could humper environment.

Ground and surface water contamination

Contamination of ground and surface water is expected due to spillages, leakage, and incorrect handling of chemicals.

Job creation

The proposed development will generate employment during the construction phase and when project decommission as few shops along the proposed project will be open. Some residents will be employed for maintenance purposes.

Local services

There will be an improvement in service delivery and number of erven, there will be empowerment of local trade industries.

Crime

The development could also have the negative impact on the surrounding nearby communities where the residents nearby the proposed site could engage into crime activities if the proposed site is poorly managed or if workers conduct is not properly checked. There is a possibility of crime rate to increase resulting in influx of construction personnel.

Settlements along the project site

Settlement that are situated nearby the site will be negatively affected during the construction phase as construction vehicles will be transporting material to and off the site so dust and is expected to affect them and traffic is expected to increase.

Unmanaged disposal of waste

Solid waste may be generated during construction and operational phase if waste is poorly managed and disposed the surrounding environment would negatively affect.

Construction camps

The choice of the site for contractor's camp requires the engineer's permission and must take into account location of ecologically sensitive areas. A site that is less sensitive to negative impacts that might result from construction camp must be considered first. The surrounding environment must be undertaken into consideration when survey activities are to be performed to avoid disturbance of the current environmental features.

Maintenance of access roads

Access roads must be maintained in a sustainable way to avoid the negative impacts on the surrounding environment. Heavy vehicles could have negative impacts on the access roads.

Hazardous Spillage

Spillage should be avoided at all times as much as possible, if it occurs it must be quickly managed to avoid the spillage to contaminate the soil, and surface water. Minor spills must not be neglected to avoid the leech into waterways.

Noise

Once the project commence high noise levels of construction vehicles are expected to occur, construction activities that emit high level of noise are plant materials, vehicles trafficking, and construction workers. Residents who are situated nearby the proposed project development are most likely to be affected by the higher noise level.

Heritage and Culture

The development could lead to destruction of areas of cultural or historic significance. More studies will be conducted to investigate on the affected development.

Road and Traffic Impacts

The movement of construction vehicles transporting materials on site and outside the construction site can result in an increase in traffic congestion. Without proper care, construction vehicles might damage local road infrastructure.

Visual impact

Visual impact can result from construction activities such as excavation, stock piling of construction materials and waste, poor planning and management of construction site, camp and activities may potentially result in negative impacts. These impacts may include inappropriate disposal of waste.

Political impacts

Political issues that might be raised by interested and affected parties is land ownership.

Description of nature and scale of impacts

The table below provides a brief description of the terms that will be utilised to assess the impact of the proposed activity on the environment.

Table 11: Criteria for rating impacts

Potential issue	Criteria	Description of elements that are central to each issue
Description	Nature	What causes the effect?
		Who will be affected?
		What will be affected?
		How will it be affected?
	Probability	May not occur with mitigation
Status	Classify whether the impact is beneficial or causes adverse impact	
Assessment	Extent	Is the impact site specific?
		Does the impact extend locally to the site or its nearby surrounding?
		Does the impact extend regionally have an impact on the region
		Does the impact extend nationally have an impact on national scale

	Duration	Short term: 0-5 years
		Medium term: 5-11 years
		Long term: The impact will continue or last for the entire operational life of the development but will be mitigated by direct human action or by natural processes thereafter. The only class of impact which will be non-transitory
		Permanent: Mitigation either by man or natural process will not occur in such a way or in such a time span that the impact can be considered transient
	Magnitude	Low: natural or social function and processes are not affected or are minimally affected
		Medium: affected environment is notably altered
		High: natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanent cease
	Reversibility	Impact is reversible or irreversible
	Cumulative or non-cumulative	Potential of two or more impacts to combine to form cumulative or synergistic impacts

Impact Assessment and Mitigation Methodology

This section provides the methodology for assessing the significance of impacts associated with the activity. Where negative impacts will be identified, mitigation measures (ways of reducing impacts) will be identified. An indication of the degree of success of the potential mitigation measures will be given per impact. The responsible person for reducing a certain impact will ensure mitigation measures are taken on the time frames of the impact will be implemented. Method used to identify mitigation and management measures for the identified impacts.

Table 13: The table below illustrate the period of mitigation and the responsible party

Mitigation	Impact and proposed mitigation and management actions	Responsibility	Timeframe
Potential to mitigate negative impact	Description of mitigation measures. Extent to which mitigation measures could influence the significance and status of impact.	The responsible person to ensure that the mitigation measures are taken.	Implementation period for the mitigation
Potential to enhance positive impacts	Where ever possible a description of the optimization measures. Extent to which they could influence the significance of impact		
Significant rating of impact after mitigation	Low, i.e. natural and social functions and processes are not affected or minimally affected.		
	Medium, i.e. affected environment is notably altered. Natural and social functions and processes continue albeit in a modified way.		
	High, i.e. natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease.		
Comment on the overall assessment and conclusion.	<p>Overall Assessment and concluding comments as to the predicted impacts after mitigation and their:</p> <ul style="list-style-type: none"> ▪ Severity and permanence ▪ Size and relative significance ▪ Ecological and socio – economic context ▪ Balance between positive and negative aspect ▪ Cost and benefits ▪ Acceptability / Unacceptability 		

Public Consultation Process

The public Consultation Process is designed to provide information to and receive feedback from interested and affected parties (I&AP). It provides organisations and individuals with the opportunity to raise concerns and make comments and suggestions regarding the proposed activity. By being part of the assessment process, stakeholders have the opportunity to influence the Project Layout, design and the Plan of Study for the EIA.

Advertisement

In compliance with the EIA Regulations (2017), notification of the commencement of the public participation process for the project will be advertised on mirror local newspaper.

The advertisement will provide an abstract on key aspects of the Latterman transport and projects (project description, location, applicable listed activities and contact details of the Environmental Assessment Practitioner). The primary aim of the newspaper advert is to ensure that the widest possible group of I&APs are informed of the project.

Written notices

Written notices will be given to any stakeholders having jurisdiction in respect of any aspect of the activity as well as the Makhado Local Municipality.

Site notices

Site notice will be prepared according to the specifications set out in the EIA Regulations. The site notices will include basic information regarding the proposed project, the details of the public participation period, the listed activities applicable to the project and the contact details of the Environmental Assessment Practitioner. Site notice will be placed on accessible areas.

Background Information Notices

Background Information Document (BID) will be posted faxed, emailed or hand delivered to I&APs. Written acknowledgement will be gathered from each of these landowners. The BID document provides information concerning the proposed development. Interested and affected parties will be invited to submit written comments concerning the proposed development and become part of the process.

Public participation Meetings

Public participation will be conducted by Plantago Lanceolata (Pty) Ltd with the stakeholders where the registered interested and affected parties will be given opportunity to be part of the meeting. Where they will be given platform to comment and express their views and raise issue of concern regarding the project.

Public reviewing of documents

Drafting of supporting document will be made available during the public participation. Where the public will be given 30 days period to comment and raise issues of contained in the report. If the plan of study has been approved should be made available for public for the period of 30 days. After the public review period, all relevant comments and questions received from the public will be considered and responded to and included into the final EIA report. Changes to the final document may be presented in the form of an amendment document. Changes made to the amendment document will be submitted directly to the authorities by I&APs.

Written Correspondence from I&APs

Comments received from I&AP's will be included in the comments and response register that will be incorporated in the Final Scoping Report. Written comments are welcome throughout the process and will be included as part of the report as the process continues.

Incorporation of comments into the final reports

Received comments during the public reviewed will be incorporated into the final EIA report which is submitted to LEDET for review and approval.

Conclusion

The purpose of this report is to provide the relevant authority with sufficient information on the potential impacts of the proposed development, so that an informed decision can be made with regards to the processes and subsequent authorisation of the proposed development. Potential environmental impact have been identified by the by the specialist and through technical expertise and by the expertise of the EAP.

