



**KONGIWE**  
ENVIRONMENTAL SCIENCE & ENGINEERING

## APPENDIX D11:

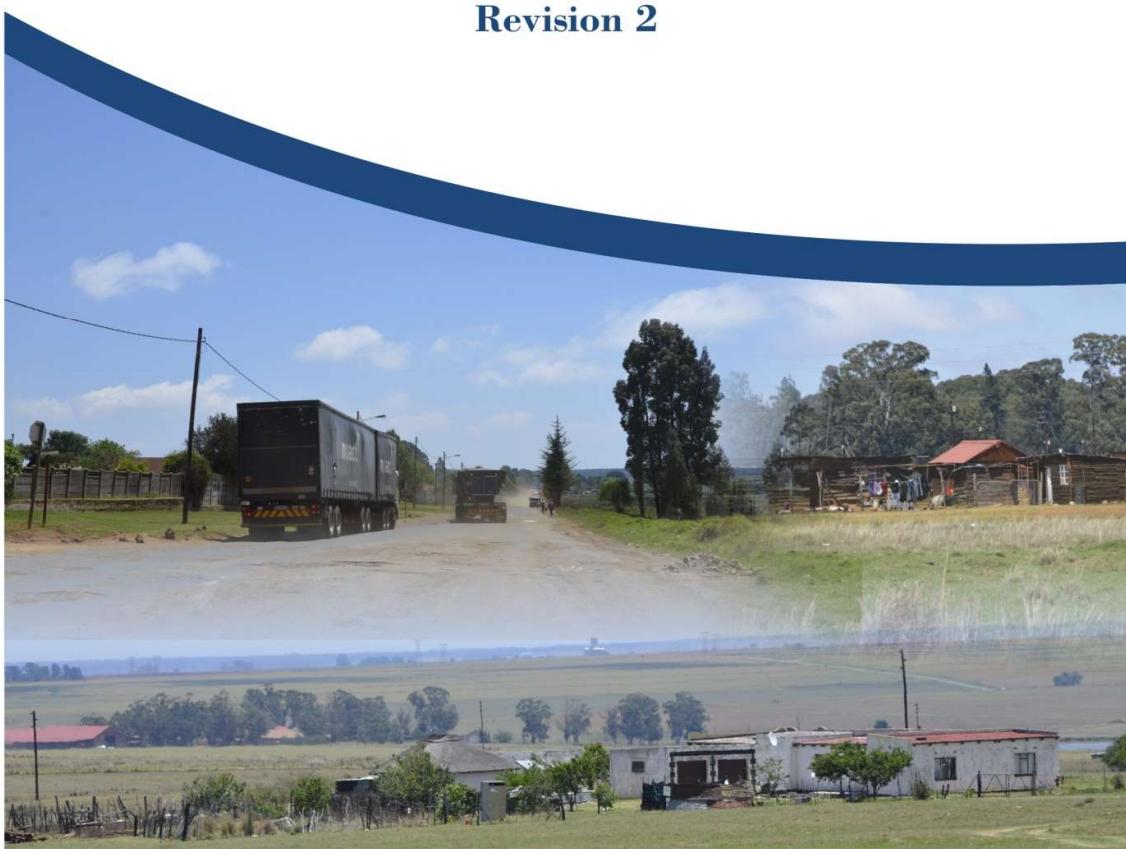
### **SOCIOECONOMIC AND TOURISM IMPACT ASSESSMENT**

# **SPECIALIST STUDY**

## **SOCIO ECONOMIC AND TOURISM**

**15 February 2018**

**Revision 2**



Report Prepared for:	<b>Kongiwe Environmental (Pty) Ltd</b> 223 Cube Workspace 1 Wedgewoodlink Byranston 2191
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Prepared by:	Pam Taylor Independent Consultant 284 William Street Brooklyn 0181 +27 8 789 7020 pam.taylor@mweb.co.za
Disclaimer:	This report is prepared for the sole benefit of Umsimbithi Mining (Pty) Ltd and has been done according to the scope of work issued by Kongiwe Environmental. The author does not accept any liability in negligence that lies outside this scope of work.

## EXECUTIVE SUMMARY

This report is compiled for Kongiwe Environmental (Pty) Ltd by Pam Taylor, an independent consultant. The report contains a Socio Economic and Tourism assessment for the proposed new coal mining project for Umsimbithi Mining (Pty) Ltd. The project is known as the Umsimbithi eMakhazeni Mining Project and is located on the Eastern Basin Coalfield in close proximity to eMakhazeni (previously known as Belfast Town) in Mpumalanga Province. The project consists of 6 different sites where a combination of open pit and underground mining is envisaged. The proposed mining operations for each site and the current predominate land use is as follows:

Pit	Proposed Mining Operations	Current Predominate Land-use
BE	Open pit mine only	Agricultural - Crop farming, grazing
BA	A combination of underground and open pit	Agricultural - Crop farming, grazing
BD	Mostly underground mining	Agricultural – Crop farming, grazing
AA	Underground mining only	Agricultural – Grazing, Plantations
BG	Mostly underground mining	Agricultural – Crop farming, grazing
BF	Open pit with a small portion underground mining	Agricultural – Crop farming, grazing

Settlements in close proximity to the project include; eMakhazeni and Madala Township, Siyathuthuka, the Wonderfontein resettled community and the Exarro resettlement site.

The aim of the assessment is to describe and understand the economic activity that shapes communities living directly on, and adjacent to, the proposed project. The question asked, is, how will the proposed project impact the economic progress, stagnation or regression of these communities (and or economic sectors) and their livelihoods.

The study has:

- Sourced information providing specific demographic data for the area and developmental priorities identified by local government.
- Engaged stakeholders where accessible.
- Reviewed the physical and general environmental setting of the project.
- Identified potentially affected communities.

- Qualitatively identified potential impacts.
- Provided recommended mitigation measures.

The local economy of the project area is predominately a resource based economy with direct contribution from the mining, agriculture and tourism sectors and related industries. All three of these sectors are deemed important by the province to help realise the economic growth needed to address the required job targets and enable sustainable livelihoods. The majority of the population is considered poor with 87% of household earning below minimum living levels. Of the approximately 14 600 households, 2 700 households are involved with Agricultural activities.

Some of the key findings and recommendations of the study are:

Umsimbithi eMakhazeni Mining Project will change the land use from agriculture to mining. For the agriculture and mining sectors to co-exist, there needs to be compliance with environmental legislation, monitoring and auditing procedures. Both sectors are contributors to the local economy and agriculture is needed for food security and job creation. The implementation of the recommended mitigation measures for air and water quality and maintaining biodiversity would be important to sustain agricultural activities undertaken adjacent to the project area.

These changes directly impact farm workers and homesteads located on Leeuwfontein 431 JS Portions 10, 2 and 4, Leeuwbank 427 JS Portion 4 and 18 and Rietvalley 387 JS Portion 2 and 5. The loss of jobs and income for these farm workers would increase their vulnerability and dependence on social grants to sustain their families. In addition, farm workers utilise land surrounding their homesteads to sustain some livestock. Their association is with a rural lifestyle. Extensive poverty, high levels of illiteracy and unemployment characteristic of the informal settlements close to the project area exacerbates any job loss. This can be mitigated through re-skilling and employment of farm workers by Umsimbithi Mining where possible. Relocation of the farm workers would need to take into consideration their small scale farming ventures.

The tourism industry has demonstrated its contribution to sustainable employment and employee empowerment and development over time. This sector is a significant contributor to job creation in the region. Local Government has prioritised efforts to maintain and expand this sector. Emakhazeni being the gateway to tourism located towards the east of the project area would want to ensure that the natural environment is not compromised in any way. Compliance with the environmental legislation, monitoring and auditing thereof would be essential to not compromise the development of this sector.

Access to job opportunities and the influx of job seekers is anticipated to be moderately low as Umsimbithi eMakhazeni Mining Project is an extension of operations at Wonderfontein Colliery. Most of the influx of job seekers is recorded in the Steve Tshwete Local Municipal Area. Emakhazeni has tightly managed the informal settlement expansion of Siyathuthuka and Madala Townships resulting in lower levels of influx to these settlements. There is the risk of spontaneous settlements developing around the Wonderfontein Station area and the densification of the Wonderfontein resettled community. The social challenges associated with this influx would be assessed as part of the Health Impact Assessment and mitigation measure recommended in this regard would need to be complied to.

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**ANNEXURE A: Comments and Response Report: Final Scoping**

## 1. INTRODUCTION

### 1.1 Project Overview and Background

Umsimbithi Mining (Pty) Ltd (Umsimbithi), proposes to develop a new coal mining project on the Eastern Basin Coalfield, Mpumalanga Province, Republic of South Africa. The proposed Project is to be known as the Umsimbithi eMakhazeni Mining Project, or in this Report, the proposed Project, and will consist of open pit mines and underground sections.

The proposed Project will be a combination of open pit and underground operations. The open pit operations are proposed to be mined using the rollover truck and shovel method allowing for concurrent rehabilitation. There will also be underground sections accessed through the high wall of the open pits. The underground sections will be mined using the bord and pillar method using continuous miners and shuttle cars. Both open pits and underground mining operations may potentially be outsourced to specialist contractors. Crushing plants and a coal washing plant will be constructed as part of the project.

It is estimated that the mine will produce approximately 74 million tonnes of coal during the Life of Mine (LoM). The coal will be supplied to Eskom and/or other domestic coal consumers. The LoM is more than 25 years. The mines will be opened in phases, one leading into the next. Trucks will take the coal from the mines to a central washing plant if beneficiation is required, else directly to Eskom or other consumers. At full production, the project is expected to employ approximately 500 people, with most of the labour coming from the eMakhazeni Local Municipality and the surrounding areas. All employment will take place in line with all the relevant legislation, codes and statutes.

The following infrastructure will be built:

- ❖ Offices, workshops, change houses, storehouses, warehouses;
- ❖ Internal roads and haul roads, fuel storage facilities;
- ❖ Open pits, underground sections, crushing circuits, a wash plant, conveyors;
- ❖ Water supply networks, storm water networks, pollution control dams, raw water dams, effluent dams, water treatment works; and
- ❖ Topsoil stockpiles, discard dumps, and Run of Mine (ROM) stockpiles.

Water will be sourced from boreholes and recycled from open pit pits and pollution control dams. Potable water will be sourced from eMakhazeni Municipality or ground water sources. The water usage strategy for the colliery is being designed to operate as a closed water system and most of the water on site is to be recycled. Electricity for the project is to be supplied by Eskom.

## 1.2 Proposed Study area and Description of the Project

The proposed eMakhazeni Project is situated approximately 56 kilometres east of Middelburg in the Mpumalanga province. The colliery will consist of numerous properties either side of the N4 stretching from 5 km to 30 km west of eMkahazeni.

Umsimbithi Mining (Pty) Ltd, the applicant, holds a Prospecting Right, MP 58 PR, for portions of the following farms:

- ❖ Bergendal 378 JT
- ❖ Bergendal 981 JT
- ❖ Driefontein 377 JT
- ❖ De Goedehoop 515 JT
- ❖ Steynsplaats 360 JT
- ❖ Forelwater 410 JT
- ❖ Majamela 973 JT
- ❖ Tweefontein 357 JT
- ❖ Weltevreden 381 JT
- ❖ Wemmershuis 379 JT
- ❖ Bospoort 399 JS
- ❖ Driefontein 398 JS
- ❖ Elandsfontein 433 JS
- ❖ Elandsfontein 1204 JS;
- ❖ Kleinfontein 432 JT
- ❖ Klippan 452 JS;
- ❖ Leeuwbank 427 JS
- ❖ Leeuwfontein 431 JS
- ❖ Paardekraal 422 JS
- ❖ Teutfontein 407 JS
- ❖ Glen Coburn 1213 JS;
- ❖ Wonderfontein 428 JS
- ❖ Rietvalley 387 JS;
- ❖ Bospoort 1208 JS

However, the application for a mining right will be confined to portions of the farms Weltevreden 381 JT, Rietvalley 387 JS, Leeuwbank 427 JS, Leeuwfontein 431 JS, Paardekraal 422 JS, Wonderfontein 428 JS and Bospoort 1208 JS (See attached map).

There are several other mining operations in the area, including Umsimbithi's Wonderfontein Colliery, as well as other Greenfields coal projects such as the Belfast Project (Exxaro) and Weltevreden (Northern Coal). There are prospecting projects in various stages of development in the area near the proposed eMakhazeni Project

The farms covered by the Proposed Project total **approximately 10 600 ha in extent, of which approximately 2 500 ha may be developed**, and consist of an extension of the Eastern Highveld basin around the Arnot and Wonderfontein collieries of the Karoo Sequence. It is Umsimbithi Mining's intention to develop Open Pit and/or Underground mining operations, with mining predominantly exploiting the No 2 Lower and No 2 Upper coal seams<sup>1</sup> within the Witbank Coalfield. The mineral to be mined will be Bituminous Coal, with Pseudocoal and Torbanite being mined if encountered. Coal produced by the Proposed Project will be for the local South African market, primarily Eskom and

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<sup>1</sup> Coal seams to be exploited are the No 1 (8.7% contribution), No 2 Lower (67.5% contribution), No 2 Upper (18.2% contribution), and No 4 Lower (5.6% contribution)

some for other domestic markets. It is expected that the following infrastructure and ancillary buildings will be constructed:

- ❖ Offices, workshops, change houses, storehouses, warehouses;
- ❖ Internal roads and haul roads, fuel storage facilities;
- ❖ Open pits, underground sections, crushing circuits, a wash plant, conveyors (should this be required);
- ❖ Water supply networks, storm water networks, pollution control dams, raw water dams, effluent dams, water treatment works; and
- ❖ Topsoil stockpiles, discard dumps, and ROM stockpiles.

Based on previous prospecting work conducted within the development footprint, six mining areas have been identified as containing feasible ore deposits worth developing. It is envisaged that the mining areas will operate independently with infrastructure being shared where necessary, and if required (such as a crushing plant and wash plant).

The proposed mine infrastructure requirements include existing private (farm) and public roads (including the N4), as well as Eskom electricity infrastructure. Water will be sourced from boreholes and recycled from open pits and pollution control dams. Potable water will be sourced from ELM or groundwater sources. The water usage strategy for the colliery is being designed to operate as a closed water system and most of the water on site is to be recycled where possible. Electricity for the project is to be supplied by Eskom. Other ancillary infrastructure may include stockpile areas, loading bays, water diversion berms for dirty water/clean water separation, storm water management systems, mobile security offices for access control, a weighbridge, potable water tanks, bulk diesel storage facility, oil storage facilities, explosive storage facilities and stores (for spares and material), and mobile ablution facilities.

It is expected that the total Life of Mine (LOM) period will be about 25 years, including 5 years for a ramp-up period, a tapering-down period and rehabilitation. The mining areas will be designed to process a total of approximately 74 million tonnes of coal during the LOM. At full production, the project is expected to employ approximately up to 500 people at full capacity, with most of the labour coming from the EML and the surrounding areas. All employment will take place in line with all the relevant legislation, codes and statutes. Each mining area may be reached via a network of all-weather gravel roads that branch off from the main tar roads, linked to the N4, between Middleburg and Belfast.

The nearest sizeable town is Belfast, and the nearest accessible railway siding is the Wonderfontein Station and Sunbury Station, directly adjacent to the Proposed Project development footprint and the N4 Highway. The intention is not to mine near the N4 highway but to leave a buffer zone for the highway and other linear infrastructure running parallel to the N4.

### 1.3 Objective of the Specialist Study

The objective of this study is to understand and describe the economic activity that shapes communities living directly on and adjacent to the proposed mining area. The question asked is, how will the proposed mining activity contribute to or detract from the economic progress, stagnation or regression of these communities (and or economic sectors) and their livelihoods.

In addition to describing the receiving environment and anticipating potential impacts, the study takes cognisance of National, Provincial and Local Government development priorities for the region. This provides a development context against which economic activities in the region are evaluated.

## 2. Approach and Methodology

### 2.1 Approach

The socio-economic assessment is the systematic appraisal of potential social and economic impacts on the local communities, economic activities, civil society resident or operating in the area of the proposed project. It seeks to provide decision makers with a set of quantitative and qualitative decision making variables that could manage both the positive and negative social and economic impacts on these sectors of society.

The approach adopted in assessing, understanding and analysing the potential social change has given consideration to the following aspects also applicable to the South African and Developmental Local Government context.

Aspect	Definition
Principles of sustainable development and social sustainability	<p>Sustainable development reflects a process that meets the needs of the present without compromising the ability of future generations to meet their own needs.</p> <p>The concept of "social sustainability" in this approach includes such aspects as: social equity, liveability, health equity, community development, social capital, social support, human rights, labour rights, placemaking, social responsibility, social justice, cultural competence, community resilience, and human adaptation.</p>

Aspect	Definition
Vulnerable groups	<p>Vulnerability as defined by WHO (2002) is the degree to which a population, individual or organisation is unable to anticipate, cope with, resist and recover from the impacts of disasters.</p> <p>Children, pregnant women, elderly people, malnourished people, and people who are ill or immunocompromised, are particularly vulnerable when a disaster strikes, and take a relatively high share of the disease burden associated with emergencies. Poverty – and its common consequences such as malnutrition, homelessness, poor housing and destitution – is a major contributor to vulnerability.</p>
Meeting basic needs and services	<p>In line with the 2030 Agenda for Sustainable Development</p>
Livelihood strategies	<p>Livelihood is defined as a set of activities, involving securing water, food, fodder, medicine, shelter, clothing and the capacity to acquire above necessities working either individually or as a group by using endowments (both human and material) for meeting the requirements of the self and his/her household on a sustainable basis with dignity.</p>
Fairness and equity	<p>Fairness is defined as the quality of having an unbiased disposition. It is the characteristic of being just to everyone, of treating them without discrimination or partiality. It is the absence of prejudice.</p> <p>“Equality” is defined as the quality of being the same in quantity, value, or status. It is the state of having a balanced social, economic, and political standing among individuals in a society despite differences in race, religion, sex, social and economic status, and culture. It refers to</p>

Aspect	Definition
	providing every individual the same opportunities to improve his rank or condition in life without expecting that the results would also be equal.
Social justice	The fair and proper administration of laws conforming to the natural law that all persons, irrespective of ethnic origin, gender, possessions, race, religion, etc., are to be treated equally and without prejudice.

## 2.2 Methodology

The methodology followed in undertaking the study included the following.

### Field Visit

A field visit was undertaken on 11 and 12 October 2017 and 9 November 2017 with the purpose to:

- Familiarise themselves with the project area and surrounding environments and to collect primary data. Semi-structured interviews were set up with Government and Community Stakeholders and the community centres and health facilities were visited.. The consultant also wanted to obtain an overview of the social characteristics of the study area and visit farms within the proposed project area.
- Conduct interviews with affected farm dwellers.

### Literature review, baseline data review and analysis

The review of existing data assisted the consultant in confirming the social setting and characteristics of the study area, as well as the key economic activities. Data studied included information from the Provincial, District and Local Municipalities Strategic Planning Documents such as their Provincial Growth and Development Strategy (PGDS), Mpumalanga Tourism Growth Strategy, Mpumalanga Growth Path, Integrated Development Plan (IDP) for Emakhazeni and Steve Tshwete Local Municipalities and other Sector Plans. Articles pertaining to coal mining and tourism within the South African context were also considered.

### Profiling

Profiling provides a summary of the social demographic and economic characteristics of the area being assessed. The purpose is to establish an understanding of; the resident communities and their livelihoods, land-use patterns, analyse demographic data and thereby identify those characteristics that will be influenced, both positive and negative, by the proposed project.

Such information could include:

- Demography
- Cultural diversity
- Population movement
- Housing and households
- Employment
- Income levels
- Farming characteristics
- Social infrastructure and
- Social capital

### 2.3 Significance criteria

The significance rating process is defined by Kongiwe below and serves two purposes: firstly, it helps to highlight the critical impacts which require consideration in the management and approval process; secondly, it also shows the primary impact characteristics associated with the identified mining activity that are used to evaluate impact significance.

The impact significance rating system is presented in the tables below and involves three parts:

**Part A:** Define impact consequence using the three primary impact characteristics of magnitude, spatial scale/ population and duration;

**Part B:** Use the matrix to determine a rating for impact consequence based on the definitions identified in Part A; and

**Part C:** Use the matrix to determine the impact significance rating, which is a function of the impact consequence rating (from **Part B**) and the probability of occurrence.

**Table 1: Significance Rating Methodology**

PART A: DEFINING CONSEQUENCE IN TERMS OF MAGNITUDE, DURATION AND SPATIAL SCALE		
<i>Use these definitions to define the consequence in Part B</i>		
Impact characteristics	Definition	Criteria
<b>MAGNITUDE</b>	Major -	Substantial deterioration or harm to receptors; receiving environment has an inherent value to stakeholders; receptors of impact are of conservation

**PART A: DEFINING CONSEQUENCE IN TERMS OF MAGNITUDE, DURATION AND SPATIAL SCALE***Use these definitions to define the consequence in Part B*

		importance; or identified threshold often exceeded
	Moderate -	Moderate/measurable deterioration or harm to receptors; receiving environment moderately sensitive; or identified threshold occasionally exceeded
	Minor -	Minor deterioration (nuisance or minor deterioration) or harm to receptors; change to receiving environment not measurable; or identified threshold never exceeded
	Minor +	Minor improvement; change not measurable; or threshold never exceeded
	Moderate +	Moderate improvement; within or better than the threshold; or no observed reaction
	Major +	Substantial improvement; within or better than the threshold; or favourable publicity
SPATIAL SCALE OR POPULATION	Site or local	Site specific or confined to the immediate project area
	Regional	May be defined in various ways, e.g. cadastral, catchment, topographic
	National/International	Nationally or beyond
DURATION	Short term	Up to 18 months.
	Medium term	18 months to 5 years
	Long term	Longer than 5 years

PART B: DETERMINING CONSEQUENCE RATING <i>Rate consequence based on definition of magnitude, spatial extent and duration (Part A)</i>					
			SPATIAL SCALE/ POPULATION		
			Site or Local	Regional	National/ International
MAGNITUDE					
Minor	DURATION	Long term	Medium	Medium	High
		Medium term	Low	Low	Medium
		Short term	Low	Low	Medium
Moderate	DURATION	Long term	Medium	High	High
		Medium term	Medium	Medium	High
		Short term	Low	Medium	Medium
Major	DURATION	Long term	High	High	High
		Medium term	Medium	Medium	High
		Short term	Medium	Medium	High

			CONSEQUENCE		
			Low	Medium	High
PROBABILITY (of exposure to impacts)	Definite	Medium	Medium	High	
	Possible	Low	Medium	High	
	Unlikely	Low	Low	Medium	

## 2.4 Gaps, Limitations and Assumptions

The Socio-economic and Tourism Study has used available and gathered data to create a picture of the economic activities that shape the livelihoods of communities living in the area of the Emakhazeni Project. The following gaps, limitation and assumptions are identified in undertaking the study:

- A study aims to identify possible social impacts that could occur in future. These impacts are based on existing baseline information. There is thus always an uncertainty with regards to the

anticipated impact actually occurring, as well as the intensity thereof. Impact predictions have been made as accurately as possible based on the information available at the time of the study.

- The study relied on the information received during the information collection process.. Sources consulted are not exhaustive and additional information can still come to the fore to influence the contents, findings, ratings and conclusions made, as the public participation process for the project should still commence.
- The baseline assessment has been done using available data obtained from municipal sources such as; Draft Spatial Development Framework, Integrated Development Plans (IDP's), Provincial Strategic Plans (Agriculture and Environment), provincial and municipal websites.
- Additional information may become known or available during a later stage, which could not have been allowed for at the time of the study.
- Individuals view possible social impacts differently due to their association with the anticipated impact. Impacts could therefore be perceived and rated differently than those contained in the Health Assessment Report. Further public participation can be used to refine findings.

### **3. NATIONAL, PROVINCIAL AND LOCAL GOVERNMENT DEVELOPMENT CONTEXT**

The National Development Plan is the country's plan to **eliminate poverty** and **reduce inequality** by 2030. It speaks to uniting South Africans, unleashing the energies of its citizens, growing an inclusive economy, building capabilities, enhancing the capability of the state and leaders working together to solve complex problems<sup>2</sup>.

To achieve this, national government prioritises the following initiatives:

- ❖ An economy that creates more jobs
- ❖ Improved infrastructure
- ❖ Transition to a low-carbon economy
- ❖ An inclusive and integrated rural economy
- ❖ Reversing the spatial effect of apartheid
- ❖ Improving quality of education, training and innovation
- ❖ Quality health care for all
- ❖ Social protection
- ❖ Building safer communities

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<sup>2</sup> National Development Plan 2010

- ❖ Reforming the public service
- ❖ Fighting corruption
- ❖ Transforming society and uniting the country

This translates to a Local Government Agenda that implements programme that:

- ❖ Build local economies and create more employment, decent work and sustainable livelihoods
- ❖ Improves Local Public Services and broadens access to them
- ❖ Builds more united, non-racial, integrated and safer communities
- ❖ Promotes more active community participation in Local Government
- ❖ Ensures more effective accountable and clean Local Government that works together with National and Provincial Government.

Mpumalanga Provincial Government recognises that initiatives and strategic foreign partnerships pursued in the past to initiate growth and development in the province did not necessarily translate into the general improvement of socio-economic conditions of the people of the province. Unemployment remains high and inequality has persisted<sup>3</sup>. In the future, Mpumalanga Province seeks a new growth path that will be **labour absorbing** and have **regional impact**.

To achieve this, Mpumalanga Province has prioritised efforts to support employment creation in the following sectors<sup>4</sup>:

- ❖ infrastructure development, which has to be a catalyst for more than simply better roads and energy – it has to create jobs in construction and a supplier industry
- ❖ climate change and the green economy
- ❖ agriculture and agro-processing and rural development
- ❖ minerals and beneficiation: to increase the level of resources that are mined and to strengthen downstream and side stream activities
- ❖ Manufacturing
- ❖ Knowledge based sectors in the economy from ICTs to higher education
- ❖ Tourism and business services and lastly
- ❖ Public Sector

Mpumalanga's Medium Term Strategic Framework identifies the key sectors driving economic development as<sup>5</sup>:

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<sup>3</sup> Draft Mpumalanga Growth and Development Plan 2011

<sup>4</sup> Draft Mpumalanga Growth and Development Plan 2011

<sup>5</sup> Towards 2014 – 2019 MTSF (Powerpoint)

Sector	Agriculture	Tourism	Mining
<b>Key Activities</b>	Provide comprehensive support to farmers for targeted commodities Prioritise land reform farms to increase production Invest in irrigation schemes for sustainable production Provide comprehensive support to small scale farmers and cooperatives Establish a fresh produce market for local and international markets Implement targeted skills development programmes in the sector	Implement a comprehensive marketing and branding strategy Invest in infrastructure of strategic tourism routes (Mpumalanga Lowveld, Trout Triangle, Loskop-Dinokeng, Songimvelo-Malolotja, and MP Lake District etc) Invest in the development of liberation heritage routes as part of the overall tourism product offering Provide comprehensive support to small businesses and cooperatives in the tourism sector	Provide comprehensive support to cooperatives and SMMEs to exploit opportunities in the mining value chain (e.g. finance, training, market access) Establish mining industrial parks Invest in skills development to empower previously disadvantaged individuals

Emakhazeni Local Municipality has translated the national and provincial development objectives and identified the following focus areas in their Local Economic Development Strategy as;

- ❖ Diversification of Emakhazeni Local Municipality's economy
- ❖ Consider irrigation of agricultural land through construction of boreholes.
- ❖ Repairs of boreholes on farms and dams which are not functional.
- ❖ Set up agro- processing industries and support the existing ones and
- ❖ Department of Education procures vegetables planted by local farmers for school feeding scheme
- ❖ Look into the contracts on farm leases given to farmers
- ❖ Form Partnership with agricultural colleges
- ❖ Improvement of farm roads to enhance of transportation of goods from farms
- ❖ Establishment of incubation programmes for small businesses
- ❖ Reduce red tapes for business registration and application of land
- ❖ Support programmes which enhance community livelihoods
- ❖ Provide skills development through establishment of skills development hub.
- ❖ Establishment of spatial equity and equality

- ❖ Monitor and improve performance of social investment programmes .

## 4. BASELINE DESCRIPTION OF RECEIVING ENVIRONMENT

### 4.1 Mpumalanga Province

Mpumalanga Province is located in the North-Eastern corner of South Africa. It borders Limpopo Province in the north, Mozambique and The Kingdom of Swaziland in the east, Gauteng and Free-State in the west, and KwaZulu-Natal in the south.

Mpumalanga makes up 6.5% of South Africa's land area and has a population of 4.04 million according to Statistics South Africa's 2011 Census. It has the sixth largest share of the national population (7.8%). This population is said to have increased with an additional 4.28 million people according to the 2015 Mid-year Population Estimates).

The province is situated mainly on the high plateau grasslands of the Middleveld. In the north-east, it rises towards mountain peaks and then terminates in the immense Drakensberg Escarpment. In some places (e.g. God's Window) this Escarpment plunges hundreds of metres down the low-lying area known as the Lowveld. The area in the east below the Escarpment is subtropical bushveld and borders on the southern part of the Kruger National Park. Situated on the south western part of the province is Lake Chrissie which is considered the largest natural freshwater lake in South Africa and is well-known for its variety of aquatic birds, especially flamingos. Mpumalanga Province is recognised as one of South Africa's top tourist destinations. In addition to the stunning scenery, some of the popular tourist sites include the Long Tom Pass, the Blyde River Canyon, God's Window, the Mac-Mac falls, Lone Creek Falls, Pilgrims Rest, , Nature Reserves and some fabulous private game reserves bordering Kruger National Park.

### 4.2 Nkangala District Municipality

Nkangala District is a category C municipality and covers the western part and is one of the 3 District Municipalities in the province. It is the smallest district of the three and makes up 22% of the provincial geographical area. Nkangala has 6 local municipalities (see Figure 1) of which Emakhazeni Local Municipality is one. The others are: Victor Khanye Local, Municipality, Emalahleni Local Municipality, Steve Tshwete Local Municipality, Thembisile Hani Local Municipality and Dr JS Moroka Local Municipality.



**Figure 1: Nkangala District Municipalities**

Nkangala is considered to be at the economic hub of Mpumalanga, and is rich in minerals and natural resources. The Maputo Corridor which transverses the district, which brings increased potential for economic growth and tourism development.

The proximity to Gauteng opens up opportunities to a larger market, which is of benefit to the district's agricultural and manufacturing sectors. The further potential inherent in exporting goods provides opportunities that need to be investigated.

#### 4.3 Emakhazeni Local Municipality

The Emakhazeni Local Municipality (ELM) is a Category B municipality situated within the Nkangala District in the heart of the Mpumalanga Province and covers an area of 4 736km<sup>2</sup>. It is bordered by City of Mbombela in the east and Steve Tshwete in the west. It is the largest of the six municipalities in the district, making up almost a third of its geographical area<sup>6</sup>.

ELM is situated mostly on the eastern escarpment region. eMakhazeni town (formerly Belfast) is the primary activity node for the area with Dullstroom, eNtokozweni (formerly Machadodorp) and Emgwanya (formerly Waterval Boven) identified as the secondary nodes. Industrial development mainly occurs in eMakhazeni but this has been greater limited over the past few years. ELM covers an area of 4 736km<sup>2</sup>. In 2011, the recorded population was 47 216 people (Census, 2011) and estimated at 48,149 in the 2016 Census

As described in the municipality's Local Economic Strategy, the area is considered a nature lover's paradise, South Africa's premier fly fishing mecca, the natural habitat of some of the sub-continent's

<sup>6</sup> [www.localgovernment.co.za](http://www.localgovernment.co.za)

rarest birds, home to some of the best rock climbing sites and spectacular wild flower displays. It is one of seven tourism regions in Mpumalanga and has become a popular tourist destination, attracting nature lovers, fly-fishers and adventure seekers to the mist and scenery of the Trout Triangle area.

The N4 Maputo Corridor, which traverses the region from west to east, the R555 from Middelburg and R33 from eMakhazeni (previously Belfast), which converge at Stoffberg Road in the north-west, are the main connecting roads forming part of the major roads of the municipality.

The R539 and R540 are important links to the Mpumalanga Lowveld, the significant and well-known tourism destinations. The area between Dullstroom, eMakhazeni, eNtokozweni and Emgwenya is known as the Trout Triangle and a significant tourism hub for the region.

There are various rivers and watercourses traversing the area, the most prominent being the Crocodile river in the north and Komati river in the south. There are numerous wetlands and sensitive environmental areas associated with these rivers. There are four nature reserves in the area, namely Tullach-Mohr reserve on the eastern boundary of the area, the Dullstroom nature reserve situated in the north of Dullstroom, the Verloren Valley Nature reserve situated in the north of Emakhazeni and the Ntsinini Nature reserve situated east of Emgwenya (Waterval Boven).

With regards to agriculture, ELM is characterised by crop farming in the west, supplemented with cattle and game farming, fruit and vegetables, trout farming in the central parts, and forestry and horticulture towards the east.

The detailed socio-economic and tourism attributes of the area are described in the sections below.

#### **4.4 Description of the current Land Uses Applicable**

Current land use in the Nkangala District is dominated by agriculture (in terms of the area occupied by this activity). In the southern part of the District, crop farming and some cattle farming are the major enterprises, while in the northern part of the District it is cattle and game farming. Subsistence farming (mixed farming and livestock) is the major enterprise in the north-western part, with associated rural residential land use; while in the eastern part, agriculture is complemented by eco-tourism and forestry (Nkangala District Municipality, 2006).

Maize for grain is the most important enterprise in Waterval-Boven and Belfast districts of the ELM as it contributes 27% towards gross farming income in these two districts. The second most important enterprise is beef cattle, contributing 25% towards gross farming income. Dry land production represents 86% of total area under crops in ELM. The agricultural sector has been experiencing a sharp decline: average annual growth rates of -5.3, -11.5 and -21.5% are recorded for the Belfast, Lydenburg and Waterval-Boven magisterial districts, respectively. The agricultural economy across the area has been affected in recent years by changes in government policies, recession, and land restitution claims. By mid-2000, there were 900 land claims in the Lydenburg area, 270 in Belfast and 29 in the surroundings of Waterval-Boven (EML EMF, 2006).

Site specific land use is maize farming, with various other agricultural farming activities occurring in the surrounding area from cattle farming to organic cherries. Agricultural land use therefore needs to be considered as an alternative land use to mining activities.

#### 4.4.1 Agriculture

Agriculture is considered to be very important to the economy of the district where the predominant farming activity within ELM is livestock farming. The agriculture sector together with tourism has the potential to be a large employer of unskilled labour and therefore a significant player in poverty alleviation efforts driven by ELM.

The Nkangala District Municipality's Rural Development Plan groups agricultural activities in the region into 3 predominant functional areas namely:

- ❖ The Western Highveld area which hosts predominantly maize and soya crop production. In the area along the Steelpoort River towards Stoffberg there are many irrigation systems and livestock farming. The crop farming area is served by 2 grain mills at Wonderfontein and Stoffberg and a soya processing plant on a farm towards Carolina.
- ❖ The central area dominated by trout farming and livestock. 3 Auction lots are based in Stoffberg, Belfast and Machadodorp and 3 abattoirs located in Belfast, Stoffberg and Waterval Boven.
- ❖ The eastern area dominated by forestry, horticulture (commodities such as avocados, lemons and oranges) and livestock farming.

20% of households in ELM are involved with agricultural activities and of the 2 715 households, a significant number are Black African farmers.

**Table 2: Number of households by Local Municipality**

Local municipality	Household involved in agricultural activities	Household not involved in agricultural activities
Albert Luthuli	19 113	28 592
Bushbuckridge	53 204	80 993
Dipaleseng	2 947	9 690
Dr JS Moroka	23 439	38 723
Emakhazeni	2 715	11 007
Emalahleni-MP	10 947	108 928
Govan Mbeki	10 253	73 622
Lekwa	6 635	24 436
Mbombela	34 648	127 125
Mkhondo	13 799	23 635
Msukaligwa	7 678	33 254
Nkomazi	28 004	67 505
Pixley Ka Seme	7 120	12 718
Steve Tshwete	6 025	58 946
Thaba Chweu	5 500	27 852
Thembisile	24 513	51 122

Local municipality	Household involved in agricultural activities	Household not involved in agricultural activities
Umjindi	3 804	16 452
Victor Khanye	3 050	17 498
<b>Total (ALL)</b>	<b>263 392</b>	<b>812 095</b>

(Source STATSSA 2011)

#### 4.4.2 Tourism

According to the World Travel and Tourism Council (2016) the tourism economy contributed R375 billion (9.4 percent) to South African Gross Domestic Product (GDP) in 2015 and the World Economic Forum (2015) confirmed that the South African tourism economy is the most competitive in sub-Saharan Africa<sup>7</sup>. The South African tourism industry was also responsible for 702 824 direct jobs in 2015. However, when indirect and induced jobs are taken into account, a total of over 1.5 million jobs are linked to the tourism industry, representing 9.9 percent of all employment in South Africa in 2015. South Africa is ranked top tourism destination in sub-Saharan Africa, and the second most popular destination in Africa, after Morocco.

Of particular interest is that South Africa ranks in 20th place for its cultural resources, 22nd for its natural resources, 15th for its positive business environment, 25th for wildlife and 15th for its World Heritage Sites. South Africa also ranks 24th overall in online searches for nature related activities<sup>8</sup>.

It is the nature related tourism aspect that is of particular interest for this study as this aspect, together with cultural resources, is the reason why ELM draws tourists to the area.

ELM forms part of the tourism triangle which is part of the N4 Maputo Corridor with the focus on fly-fishing. The area between Dullstroom, eMakhazeni, eNtokozweni and Emgwenya is known as the trout triangles. The Trout Triangle area is situated on the highest part of the Steenkampsberg Plateau at approximately 2 072 m above sea level, with the Dullstroom station being the highest point in Mpumalanga. The Trout Triangle consists of a number of trout farms in areas considered ecologically sensitive. These farms and dams are a source of tourism, drawing in thousands of fishermen, and fly-fishermen each year. In 2013, data indicated that the number of trips has increased to 109 320 from 37 083 in 2001 with the total spend estimated at R768.6 million.

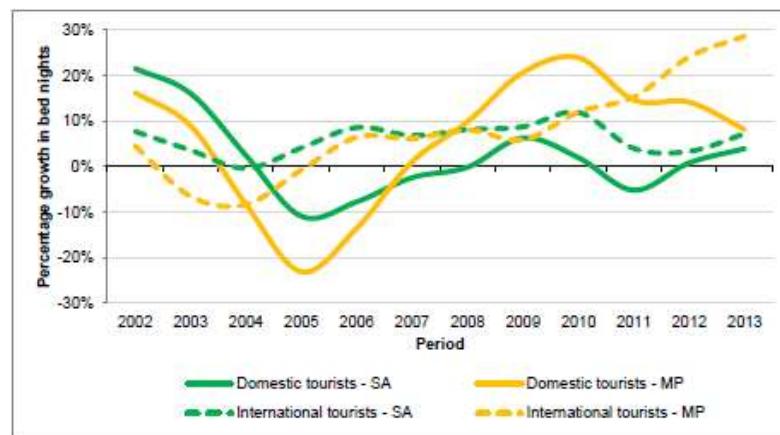
The natural beauty and rural character together with the fly-fishing activities makes the area highly attractive to tourists. Emakhazeni is seen as the tourism gateway to the region as it receives tourist on route to Kruger Park on the N4 or Dullstroom / Pilgrims Rest / Hoedspruit traveling along the R540. Tourism is recognised by ELM as a key local economic development driver. It has the potential as a pro-

<sup>7</sup> National Tourism Sector Strategy 2017

<sup>8</sup> National Tourism Sector Strategy 2017

poor strategy promoting community development and sustainability in a manner that is beneficial to the region<sup>9</sup>.

According to Tourism South Africa's *Annual Report 2013*, Mpumalanga was the fourth most visited province by foreign visitors in 2013, with a share of 12.5 per cent of total foreign arrivals visiting the province. This was down from 15.2 per cent of total foreign arrivals in 2012. Mpumalanga captured 10.0 per cent of the total bed-nights spent by all foreign<sup>10</sup> tourists in South Africa. This was higher than the 8.8 per cent in 2012 and the province moved from joint third position to third overall. Mpumalanga attracted 12.0 per cent of domestic tourists in 2013 and remained in fourth position.



Source: IHS Global Insight – ReX, June 2015

**Figure 2: Comparison of Growth in bed nights by origin of tourist in South Africa and Mpumalanga, 2002-2013**

In drafting a rural development strategy<sup>11</sup> for the district, local stakeholders indicated the following as inputs towards the contribution and development of tourism for the region.

- ❖ Acknowledgment that the fly fishing potential has not been fully utilised and when utilised would be a significant contributor to job creation.
- ❖ There are more natural dams in the Belfast area than Dullstroom. The reason for Dullstroom's success as a tourist destination is due to good marketing and active involvement of local stakeholders (civil society).
- ❖ Stoffberg, Machadodorp and Waterval Boven are all recognised as areas with significant undeveloped tourism potential.
- ❖ Key events in the region such as the Annual Scottish Festival in Tonteldoos serve as great tourist attractions.

<sup>999</sup> Emakhazeni Local Municipality Audited Annual Report 2015/2016

<sup>10</sup> SERO

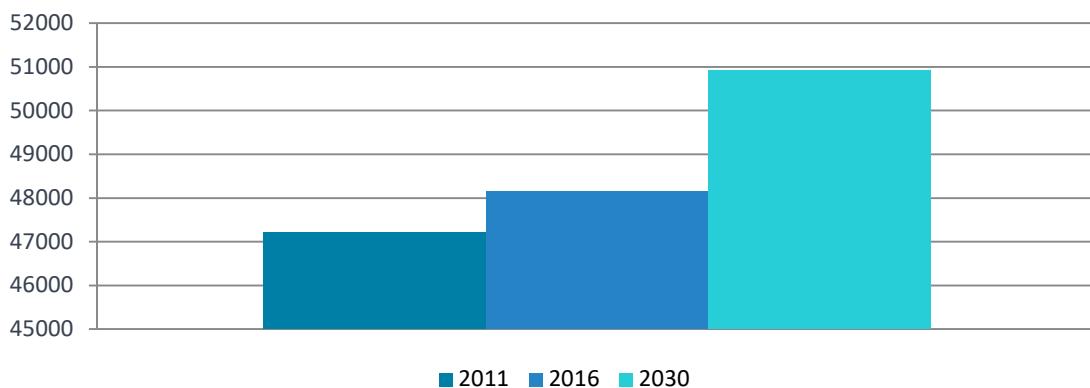
<sup>11</sup> NDM: Draft Rural Development Strategy

## 4.5 Population Dynamics

ELM is home to approximately 47 176 people (2011) and the region has seen a population growth of 9.8% between 2001 and 2011 and annual growth of 0.4% from 2011 to 2016. Mpumalanga's overall population increase expressed in absolute terms is 6%. And this is marginally lower than the national population increase (6.2%) and the fourth largest increase following Gauteng, Western Cape and Kwa-Zulu Natal.

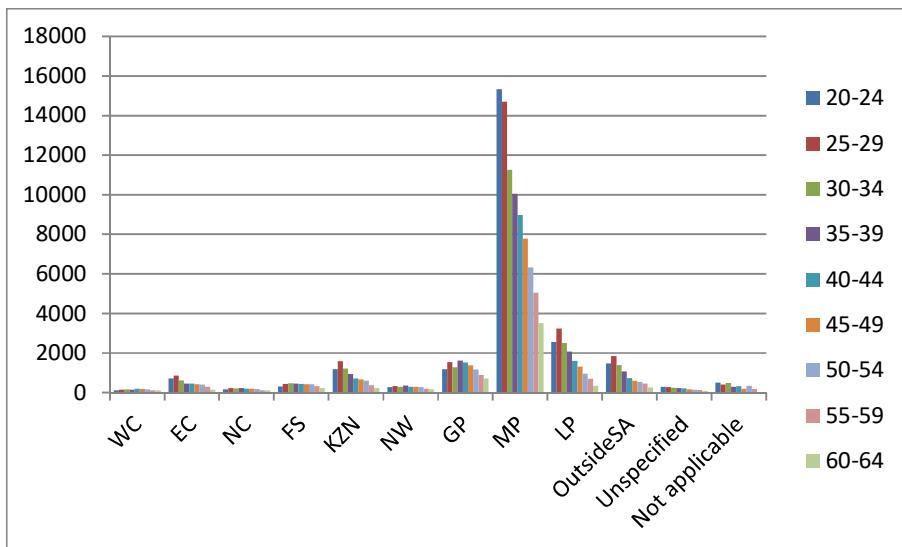
The future growth rate for ELMs is estimated at 0,9%.

In 2011, 41.8% of the population was resident in Ehlanzeni DM, 32.4% resident in NDM and 25.8% in Gert Sibande DM. It is estimate that the population will exceed 50,917 people in 2030 (Figure 3) (IDP, 2017). ELM comprises approximately 3.3% of NDM's total population. Of this population, 87.2% were Africans, 10.8% Whites, 1.2% Coloureds, 0.7% Asians and 'Others' at 0.2% (Census, 2016).



**Figure 3: Population numbers of ELM**

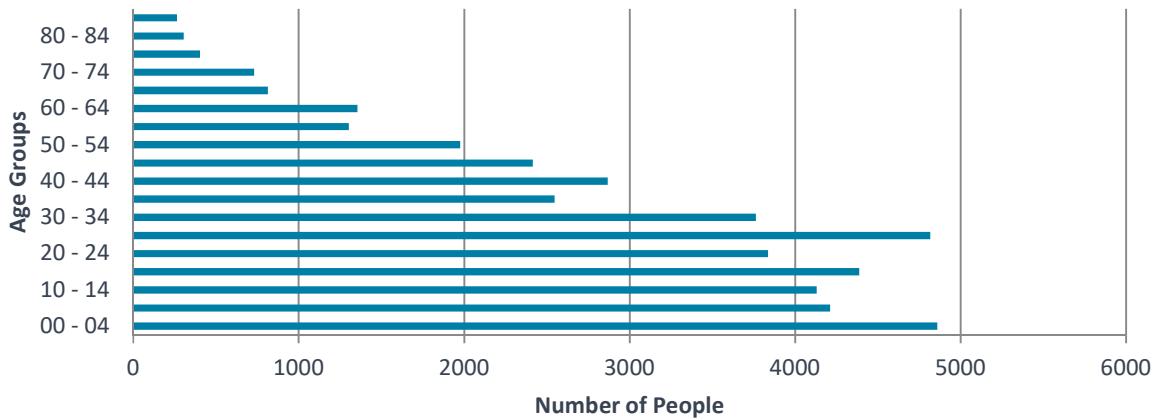
ELM's neighbouring municipality, Steve Tshwete Local Municipality has recorded high levels of migration over the past 10 years and indicated this in their Local Economic Development Strategy (2015/2020). Their average annual population growth is 4.4% compared to ELM's 0.4%.



**Figure 4: Migration by Age**

(STLM LED Strategy 2015/2020)

Figure 5 shows a typical age structure of a very young population. According to 2011 Census data the youth (up to the age of 34 years) comprises more than half of the population at 65.6%. While in 2016, 29.4% of the population was under the age of 15 years (Census, 2016). The large percentage of youth is comparable to the neighbour local municipalities of Steve Tshwete in the west and Mbombela in the east.



**Figure 5: Age Structure of ELM in 2016**

There is even distribution between males (51%) and females (49%) in 2011 and the ratio remained unchanged in 2016 with 51.3% males and 48.7% females (Census, 2011, 2016). The population is largely South African Nationals with only 2.8% of the population comprising of individuals who were not born in South Africa (Census, 2016).

For Mpumalanga, females are in the majority for both Ehlazeni and Gert Sibande DM's but males are the majority in NDM. Mpumalanga's average fertility rate for the period 2001 – 2006 was 2.97 and 2.73 for the period 2006-2011. ELM also indicates a slight decline in the fertility rate for the period 2001 to 2006.

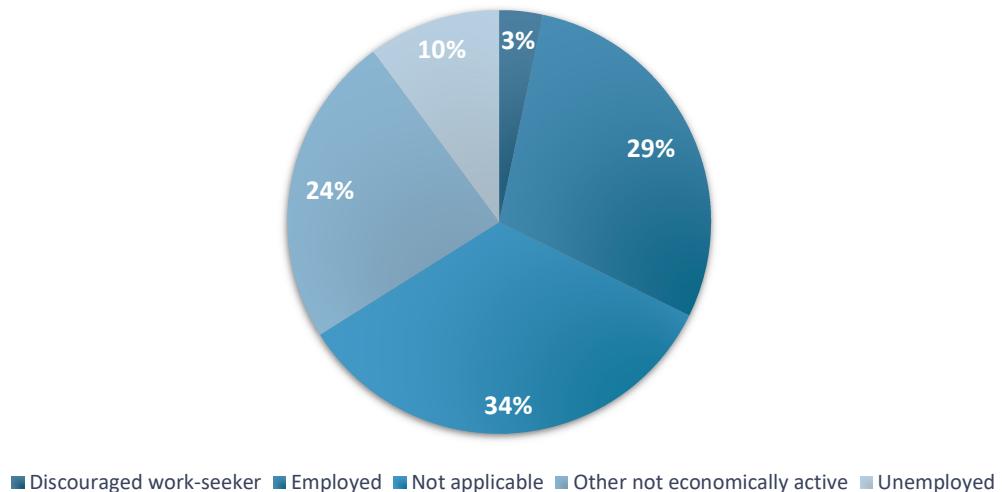
## 4.6 Socio Economic Environment

### 4.6.1 Household Size and Type

The number of households located with ELM is estimate at 13,722 in 2011 and 14,633 in 2016 (IDP, 2017) with an average number of 3.3 people per household (Census, 2011). In 2011, a large portion of these households were headed by females (35.9%) and only 0.5% headed by children who are between the ages of 10 and 17 years. In 2016, the majority of the population lived in formal housing (70%), with the remaining living either in traditional housing (10%) or informal housing (10%) (Census, 2016). Formal housing includes brick built structures and typically consists of four rooms while traditional housing is constructed from traditional materials such as clay bricks and thatching grass and it is assumed that traditional housing is more prevalent in the rural areas of ELM

### 4.6.2 Income Levels

Between 2001 and 2011, there was an improvement in the employment rate in ELM. In 2011, a quarter of the population (25.9%) was unemployed (Census, 2011). The unemployment rate was significant higher amongst females (34.1%) and youth (32.2%) compared to the unemployment rate for males of 19.8%. In 2016, the unemployment rates had declined further for woman to 29.2% (Census, 2016). The decline in unemployment rates is similar for males and females, although employment opportunities remain higher for males. Average annual household income has increased dramatically between 2001 and 2011 increasing from R 36,170 to R72,310 (Census, 2011).



**Figure 6: ELM Employment Status**

Of those employed, 58.9% were active in the formal sector (Census, 2016). Leading industries in terms of employment in 2011 were trade (25.1%), private households (14.9%) and community services (13%). Between 2001 and 2011, there has been a decreasing role of agriculture and manufacturing as an employer and increasing role of mining, community services, construction and finance (Census 2011).

#### **4.6.3 Employment Sector**

Mpumalanaga as a Province has been mainly at or above the national average for employment levels. Of people employed in Mpumalanga (43% of working population, year 2015):

- ❖ 106 000 employed in manufacturing
- ❖ 104 000 in construction
- ❖ 103 000 in mining (2014)
- ❖ 89 000 in agriculture

#### **4.6.4 Educational Levels**

35.9% of those aged 20 years and older have qualified with a matric certificate or higher qualification. Educational levels within ELM are improving with functional literacy increasing from 61% in 2001 to 76.2% in 2011 (Census, 2011). In 2016, the number of individuals with a matric certificate had decreased to 32.7% (Census, 2016). A Matric pass rate of 84.5% was recorded in 2016 which is the fifth highest in the province but has declined compared to previous years. University admission rates in 2014 were 33.6% and admission to diploma studies 35.5%.

### **4.7 Settlements**

The major concentration of the population is situated in the four main towns namely eMakhazeni (or Belfast), Dullstroom, Entokozweni (or Machadodorp) and Emgwenya (or Waterval Boven). Apart from these centres, it is evident that there are clusters of people located in the rural areas as follows (NDM Rural Development Plan):

- ❖ The area around Wonderfontein
- ❖ The area adjacent to the south of Stoffberg
- ❖ The area to the west of Dullstroom (towards Tonteldoos) and to the north-east of Dullstroom towards Mashishing
- ❖ The area south of Machadodorp and WatervalBoven



Figure 7: Madala Township, Emakhazeni



Figure 8: Settlements located close to mining infrastructure

#### 4.8 Profile of the Local Economy

Natural resources make a significant direct contribution to the local (district) economy in terms of:

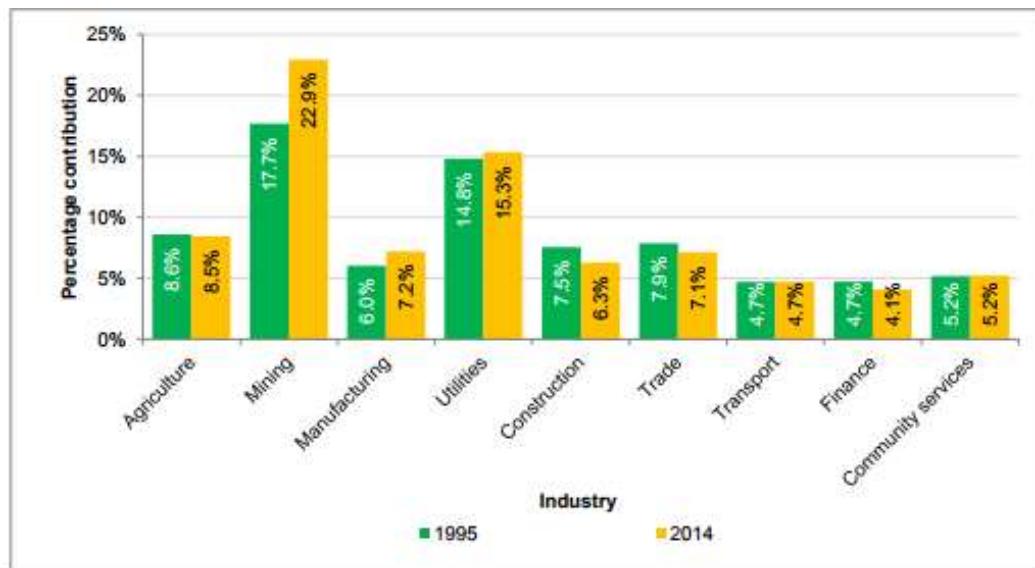
- Mining and energy generation,
- Agriculture and
- Tourism

The provincial economy is dominated by mining (22%), followed by manufacturing (12%), construction (3%) and agriculture (3%). Mpumalanga's economy benefited greatly from the commodity boom that lasted 2003 – 2011. Commercial agriculture and extensive heavy industry in the Highveld region are noted as important contributors to the local economy. ELM's economic sectors are mainly mining (18.5%) trade (17%) and community services (17%) (Census, 2016). The fastest growing industries between 2011 and 2015 were construction at 1.5% annually, community services at 1.2% and transport at 1.1%. The average annual economic growth rate for the municipality over the period of 1996 to 2015 has been noticeably low at 2.0%.

**Table 3: Contribution of Sectors to Emakhazeni GDP**

	2001	2011
Trade	26,7	18,9
Agriculture	17,2	10,7
Manufacturing	13,9	8,5
Community Services	11,4	12,7
Private Households	9,6	8,3
Transport	7,1	6
Mining	5,4	24,4
Construction	5,2	6,5
Finance	2,8	3,6
Utilities	0,6	0,5

(source: IDP 2016/2017)



**Figure 9: Mpumalanga's contribution to South Africa's industries' GDP at basic prices (constant 2010 prices) 1995-2014**

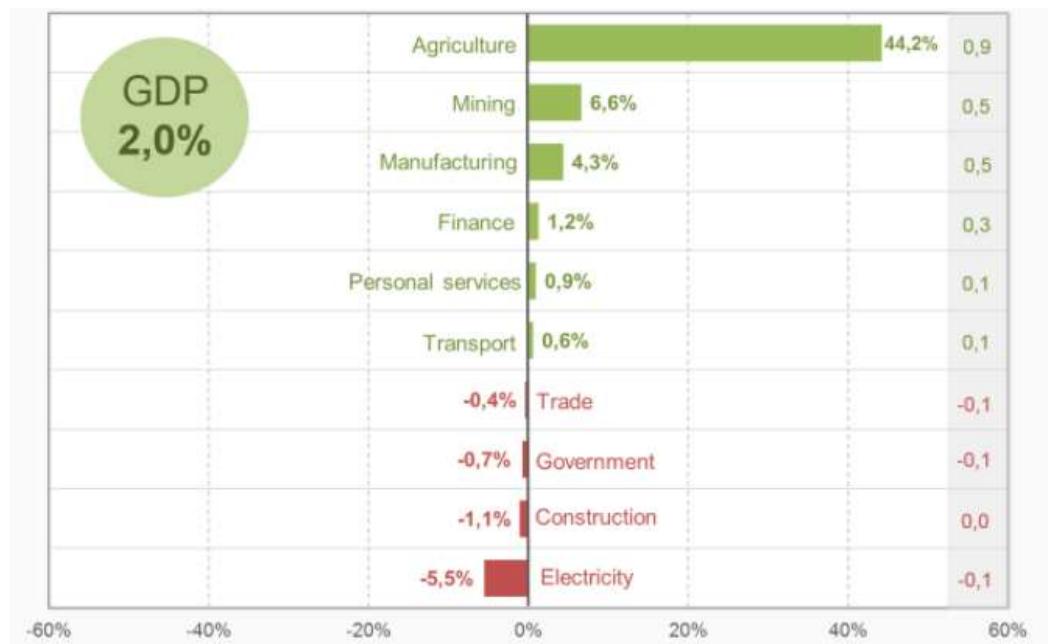
(Source: Statssa, 2016)

Nkangala District Municipality is the largest contributor to the Provincial Gross Value Add where Mining and Utilities made significant contributors. There is also a significant increase in the mining

contribution between 1996 and 2014. Both Gert Sibande and Ehlanzeni show the greatest contribution from Agriculture.

**Table 4: Contribution by districts to Mpumalanga's industries' GVA (constant 2010 prices), 1996-2014**

Industry	Gert Sibande		Nkangala		Ehlanzeni	
	1996	2014	1996	2014	1996	2014
<b>Agriculture<sup>1</sup></b>	36.9%	36.8%	25.7%	26.9%	37.4%	36.3%
<b>Mining<sup>2</sup></b>	40.7%	24.1%	52.9%	72.3%	6.4%	3.6%
<b>Manufacturing<sup>3</sup></b>	37.7%	52.5%	36.8%	27.5%	25.5%	19.9%
<b>Utilities<sup>4</sup></b>	24.1%	26.8%	54.3%	57.0%	21.6%	16.2%
<b>Construction<sup>5</sup></b>	23.9%	26.0%	34.8%	33.2%	41.3%	40.7%
<b>Trade<sup>6</sup></b>	26.9%	28.4%	31.5%	30.4%	41.7%	41.1%
<b>Transport<sup>7</sup></b>	28.9%	30.1%	34.3%	34.5%	36.7%	35.4%
<b>Finance<sup>8</sup></b>	18.1%	24.1%	37.9%	33.0%	44.1%	42.9%
<b>Community services<sup>9</sup></b>	23.5%	26.4%	31.0%	28.7%	45.5%	44.9%
<b>Total</b>	<b>31.5%</b>	<b>29.8%</b>	<b>41.1%</b>	<b>42.4%</b>	<b>27.4%</b>	<b>27.8%</b>



**Figure 10: South Africa Industry Performance third quarter 2017**

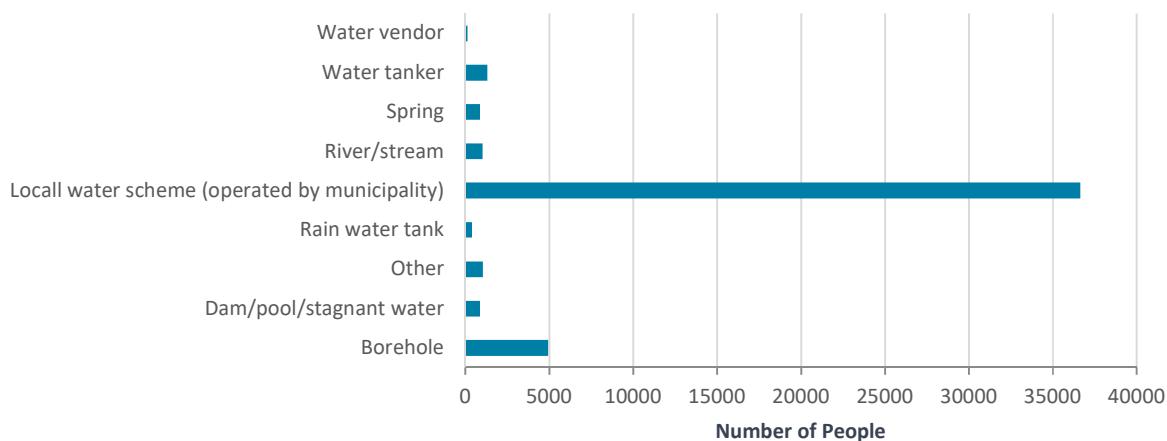
With a Gross Domestic Product (GDP) of R2.88 billion in 2014, ELM contributed 2.45% to the NDM GDP of R117billion in 2014. ELM's contribution to the Mpumalanga economy is 1% which is the fourth smallest economy in the province and the second smallest in NDM (Census, 2016). It is forecasted that the average annual GDP growth for 2015-2020 will be around 1.1% per annum which is slightly lower than the GDP of NDM and Mpumalanga which is expected to be 1.41% and 1.12% respectively and significantly lower than the historic growth rate of 5% per annum between 1996 and 2013 (IDP, 2017).

Tourism spend as a percentage of the GDP was estimate at 21.4% which is the second highest in the province.

## 4.9 Access to Services

### 4.9.1 Water and Sanitation

In 2011, 95.3% of the households within the ELM had a connection to a piped water supply either on their properties (87.9%) or on a communal stand (7.4%) (Census, 2011). The primary water source is a local or regional water scheme run by a water services provider (Figure 11). Approximately 71.7% of the weekly refuse removed is serviced by the municipality. Both of these indicators are better than district levels (Census, 2011). ELM is ranked fifth, in 2012, in the province for Blue Drop Performance and sixth for Green Drop Performance.



**Figure 11: Water Sources within ELM (Census, 2016)**

The number of household with no toilets or with bucket systems is worse than district averages at 7.8% while 78.6% have access to flush or chemical toilets and a further 10.8% make use of pit latrines (Census, 2016). Electricity is the leading source of energy for all users. Since 2001 the use of electricity as a lighting source has increased within ELM with paraffin and candle usage decreasing.

### 4.9.2 Electricity

Electricity services in South Africa are at crossroads. National economic growth has outstripped available generation capacity, while the regulatory uncertainty has undermined effective management of distribution assets at the municipal level. Like many municipalities, Emakhazeni local municipality being a small municipality in population size, consumers are now experiencing significant price rises that are necessary to pay for expanding generation capacity coupled with financial and operational challenges in securing municipal distribution networks. The municipal distribution network covers households, businesses and municipal own consumption. The municipality with the assistance of Department of Energy has electrified rural areas, which are comprising a larger proportion of the backlogs identified by Census 2011. The network in the lower part of Emakhazeni which was a challenge for some time has been resolved and upgraded. The Siyathuthuka network has also been upgraded and the outstanding ring feeds completed. The municipality is still experiencing

serious challenges of upgrading Eskom's Nominated Maximum Demand and the funding of the Electrical Master Plan. The backlogs on the supply of electrical services is still 17,9%.

#### 4.9.3 Housing Provision

**Table 5: ELM Household Dynamics**

	2011	2016
No Households	14 633	13 722
Average household size	3.3	3.3
Female headed households	36.6%	35.9%
Formal dwellings	80.4%	81.8%
Housing owned	56.6%	52.7%

#### 4.9.4 Poverty

ELM has a high dependency ratio of 51% which increase over the past 5 years from 47.4 (2011). Just on 40% of the population is economically active (NDP Rural Development Plan) leaving almost 60% of the population not economically active).

### 5. IMPACT PREDICTION AND EVALUATION

#### 5.1 Impact on Local Agriculture

Current land use in the Nkangala District is dominated by agriculture (in terms of the area occupied by this activity). In the southern part of the District, crop farming and some cattle farming are the major enterprises, while in the northern part of the District it is cattle and game farming. Subsistence farming (mixed farming and livestock) is the major enterprise in the north-western part, with associated rural residential land use; while in the eastern part, agriculture is complemented by eco-tourism and forestry (Nkangala District Municipality, 2006).

Maize for grain is the most important enterprise in Waterval Boven and Belfast districts of ELM as it contributes 27% towards gross farming income in these two districts. The second most important enterprise is beef cattle, contributing 25% towards gross farming income. Dry land production represents 86% of total area under crops in ELM. The agricultural sector has been experiencing a sharp decline: average annual growth rates of -5.3, -11.5 and -21.5% are recorded for the Belfast, Lydenburg and Waterval-Boven magisterial districts, respectively. The agricultural economy across the area has been affected in recent years by changes in government policies, recession, and land restitution claims. By mid-2000, there were 900 land claims in the Lydenburg area, 270 in Belfast and 29 in the surroundings of Waterval-Boven (EML EMF, 2006). Site specific land use is maize farming, with various other agricultural farming activities occurring in the surrounding area from cattle farming to organic cherry orchids. (Scoping Report)

Considering the above, one could say that Agricultural land use needs to be considered as an alternative land use to mining activities. Much of the spatial planning documents reviewed as part of this study identifies Agriculture and a value adding sector for the region.

Consultation with landowners through the public participation process highlights the concerns raised by farmers relating to the impact of the proposed mine on their operations. Some of the concerns raised are indicated below. The comprehensive record of the concerns and comments are given in the Comments and Response Report included as Annexure A.

Some concerns raised by farmers:

- Impact of farm labourers living on the farms and homesteads located in close proximity of the mine. (Relocation of farm workers)
- Unbearable dust as a result of mining operations and its impact on the quality of farming operations.
- Influx of job seekers and increased security risk.
- Impact on the value of properties located adjacent to the mine.
- Impact on the operations of Wonderfontein Mill and job losses should the mill close.
- Financial risks associated with rental agreements not being renewed due to the impact of mining operations.
- Livestock watering and the impact of reduced water quality.
- The impact on our ‘sense of place’ – will the relocation plan ensure that we can maintain our rural lifestyle.
- Air and water pollution and the impact on produce produced in the area.

The anticipated direct and indirect impacts on farmers located in the study area are listed in table 6 below.

**Table 6: Farms directly and indirectly impacted by the proposed mine**

Farm Name	Portion	Within Mine Footprint	Nature of Farming	Homesteads / Farm Workers
<b>BE Infrastructure</b>				
LEEUWFONTEIN 431 JS	10	Open Pit ( pit BE)	Crop	2 households
LEEUWFONTEIN 431 JS	2	Open Pit (pit BE)	Crop	ALZU Managers home + worker accommodation (6 families)
LEEUWFONTEIN 431 JS	4	Open Pit (pit BE)	Crop and Livestock	5 households & graves
<b>Indirect Impact (Residential Proximity)</b>				
BREYTENBACHSRUS 421 JS	1	Adjacent	Crop	
WILDFONTEIN 420 JS	5	Adjacent	Crop and Livestock	25 residential informal structures
BREYTENBACHSRUS 421 JS	0	Adjacent	Crop	Farm house and +15 structures
WILDFONTEIN 420 JS	4	Adjacent	Livestock	
LEEUWFONTEIN 431 JS	14	Adjacent	Crop and Livestock	2 Farm worker households
<b>BF Infrastructure</b>				
WONDERFONTEIN 428 JS	3	Underground mining	Crop and Livestock	
WONDERFONTEIN 428 JS	20	Open Pit and Underground (Pit BF)	Crop and Livestock	
<b>Indirect Impact (Residential Proximity)</b>				
WONDERFONTEIN 428 JS	3	Adjacent	Crop and Livestock	Vibrations and dust
LEEUWBANK 427 JS	17	Adjacent	Crop	Vibrations and dust
LEEUWBANK 427 JS	2	Adjacent	Crop	Vibrations and dust
LEEUWBANK 427 JS	6	Adjacent	Crop and Livestock	Vibrations & down stream
<b>BG Infrastructure</b>				
LEEUWBANK 427 JS	4	Open pit and Underground (Pit BG)	Crop	Homesteads / Farm Workers & Graves
LEEUWBANK 427 JS	18	Open pit and Underground (Pit BG)	Crop	Homestead
LEEUWBANK 427 JS	0	Underground mining	Crop and Livestock	35 Labours employed on Farm
LEEUWBANK 427 JS	35	Underground mining	Road reserve	
LEEUWBANK 427 JS	36	Underground mining	Road reserve	
LEEUWBANK 427 JS	27	Underground mining	Road reserve	
LEEUWBANK 427 JS	RE	Underground mining	Crop and Livestock	
LEEUWBANK 427 JS	6	Open pit (Pit BG)	Crop and Livestock	
LEEUWBANK 427 JS	12	Underground mining	Exxaro	

<b>BD Infrastructure</b>				
RIETVALLEY 387 JS	0	Undergound and Incline shaft (BD)		Family Johannes Sithole living on property
<b>BA Infrastructure</b>				
RIETVALLEY 387 JS	2	Open pit and Underground (Pit BA)	Crop and Livestock	Homestead, 8 Labour households & graves
RIETVALLEY 387 JS	5	Open pit and Underground (Pit BA)	Livestock	3 homesteads (residential proximity, Northern Part of farm)
<b>Indirect Impact</b>				
BOSPOORT 1208 JS	0	Adjacent	Crop and Livestock	
PAARDEPLAATS 380 JT	30	Adjacent	Livestock	Vibration and Dust
PAARDEPLAATS 380 JT	29	Adjacent	Horticulture	Vibration and Dust
PAARDEPLAATS 380 JT	40	Adjacent	Horticulture	Vibration and Dust
<b>AA Infrastructure</b>				
WELTEVREDEN 381 JT	0	Underground mining(AA)	Pine trees	No people living on properties
WELTEVREDEN 381 JT	8	Underground mining(AA)	Pine trees	

Agricultural operations undertaken on the farms Leeuwfontein Portion 10, 2 and a section of Portion 4 would be impossible due to proposed mining operations. A section of Wonderfontein 428 JS Portion 20 would relinquish farming operations to mining as well as a section of Leeuwbank 427 JS Portion 4 and 18. A later development of the mining operations is envisaged for farm Rietvalley 387 JS Portion 2 & 5 and a section of Portion 0. Open pit mining proposed on these sections of land would make agricultural activities on the affected areas impossible. Even after rehabilitation has been undertaken, it is anticipated that the soil conditions would not be able to return to its pre-mining state, which would thus have negative impacts on possible future agricultural production. These lands would then possibly be suitable for livestock farming only.

The farm Paardeplaats 422 JS Portion 4 is currently being rented to a lessee who uses the property for agricultural purposes. This is in close proximity to the Wonderfontein Agricultural Hub where Wonderfontein Mills and Silos are located. Should the open pit mining activities on the Leeuwfontein properties result in the ending of lease or operation agreements, long term financial loss will be incurred by the respective property owners.

The impact of the Haul roads and the subsequent impact of dust will be determined by the Air Quality Specialists in their study of the area as well as the Transport Study. Some of the farmers have indicated the significant impact of dust from current mining operations. The full impact of the dust as a result of the extension of mining operations in the area would be capture in the EIA which looks at impacts from all specialist studies. At this stage, one can anticipate that farming sections adjacent to the haul roads would sterilise the land for agricultural activities.

Underground mining on farms Wonderfontein 428 JS Portion 3, Leeuwbank 427 JS Portion 0, 35, 36, 27 and 12 and Weltevreden 381 JT Portion 0 and 8 would have no direct negative impacts on the resource use by the property owner. It is anticipated that there could be some intrusion impacts but the main concern relates to possible contamination of ground water or surface water from the mining activities. Such pollution would have severe negative impacts on the agricultural activities of affected landowners dependent on borehole water for agricultural and household purposes with subsequent economic implications. (Already highlighted by the Poultry Farmers during the Public Participation Process).

The impact of coal mining on natural resources is well understood and documented. According to South African Department of Environmental Affairs, it is the first step in the dirty lifecycle of coal. It causes deforestation and releases toxic amounts of minerals and heavy metals into the soil and water. It is therefore a trade-off of the natural resource, mining versus agriculture. As Umsimbithi mining extends mining operations on agricultural areas, it is anticipated that the operations will be contained within the mining right authorisation. It is recognised that Agricultural operations continue on the farms adjacent to the mining operations.

Concern with regards to the loss of opportunistic grazing land to mining has been raised by farm labourers currently residing on the impacted farms. The area around their homesteads is used to graze their livestock and the concern of these families is whether relocation will provide an equivalent resettlement option.

The cultivation of crops in close proximity to the open pit mining activities could be negatively affected by dust creation due to the use of the gravel haul roads on site, blasting and the initial site earthworks (especially during harvesting times). This study

## 5.2 Impact on Local Tourism Industry

The area between Dullstroom, eMakhazeni, eNtokozweni and Emgwenya is known as the trout triangle which is part of the N4 Maputo Corridor with the focus on fly fishing. ELM successfully draws tourists to the area because of the natural beauty and rural character. It is also considered the gateway

to the popular Lowveld area and a significant corridor for tourist on route to Kruger National Park. The natural environment is therefore a primary asset to the region.

Tourism is well developed in the Dullstroom area (Ward 4) where tourism is the predominant contributor to the local economy. Tourism around eMakhazeni, Waterval Boven and Machadodorp is considered to be undeveloped. There are more dams in the Belfast region than in Dullstroom area yet the Belfast region has not managed to convert this asset into an income generating entity. Both Waterval Boven and Machadodorp hold significant historic tourism potential.

The benefits of tourism to an area are broadly categorised as i) economic (direct and indirect employment opportunities and services), ii) environmental (improvement, encouragement of awareness, enhancement of management) and iii) socio-cultural (enhancement of infrastructure development, improved local and regional security, increase in civic pride, increased in-house development) The social benefits initiated by tourism can be extensive in scope and present a range of outcomes that exceed economic gain.

Mining activities, stockpiles and associated infrastructure are usually perceived to be visually unsightly which detracts from the natural environment.. s.

The proposed mining area is located in parts of Wards 1 and 8 which borders Ward 4. Technically it can be argued that the mining activity for the proposed Project will merely extend mining in a north easterly direction from the Western area already dominated by mining activity. On the other hand however, and considering the increasing importance of tourism for the regional economy, one needs to ask if the mining activity is encroaching on the pristine natural environment that draws tourists to the area.

Tourism studies conducted in the Dullstroom area demonstrated that tourism has provided a valuable solution to unemployment. Jobs created through the tourism sector provided numerous opportunities for both social and economic growth. Residents from Sakhelwe have achieved a standard of living that is considered to be higher than those in similar townships throughout Mpumalanga or even nationally<sup>12</sup>. The value of the Tourism industry therefore in alleviating poverty and creating sustainable long term employment is considered by this study as a significant benefit for ELM. The job opportunities created through the development of the tourism industry should be compared with those created by Umsimbithi Mining.

Impact on Local Tourism Industry	
<b>Magnitude</b>	Minor
<b>Duration</b>	Long term
<b>Spatial</b>	Regional

<sup>12</sup> Gareth Butler, University of Johannesburg, May 2012

<b>Consequence</b>	High
<b>Probability</b>	Possible
<b>Significance</b>	Low
<b>Mitigation:</b>	
<ul style="list-style-type: none"> <li>• Compliance with Environmental Management Plans</li> <li>• Maintain Biodiversity Monitoring throughout the Life of the Mine</li> <li>• Minimize the need for rehabilitation</li> </ul>	

### 5.3 Economic Impact

Agriculture's share of the real economy in Mpumalanga is 2.7%, Mining 21.6%, Manufacturing 12.5% and Construction 3% (2014) in comparison to 2004 where Agriculture was 3.9%, Mining 18.2%, Manufacturing 17.9% and Construction 1.6%. Other significant sectors contributing to the economy are Trade, Finance and Government Services<sup>13</sup>. The agricultural and tourism sectors are considered important sectors in the District and Local Government Regional Planning strategies as they contribute to diversifying the rural economic base<sup>14</sup>.

The area between Middleburg and Emakhazeni is recognised as the second Cluster development of Mining in NDM, where the first being the entire area between Delmas, GaNala/Kriel, Hendrina, Middelburg and Witbank which is covered by mining license applications. It is recognised that mining applications to the North of Emakhazeni towards Dullstroom and Emgwenya would be problematic as this starts to encroach on the tourism industry and pristine natural environment of this part of region. Emakhazeni acts as the primary activity node in the region and is also the declared Farmer Production Support Unit to the region. Dullstroom, Machadodorp and Waterval Boven are secondary activity nodes providing a range of functions and services to the surrounding areas, with a strong drive towards enhancing tourism in each of these towns.

As part of their strategic economic planning for the region, STLM and ELM prioritise the following:

- The increasing importance of tourism in the regional economy.
- Recognition of the importance of conserving the natural environment and water resources;
- Tourism development
- Promotion of agricultural activities, including protecting the available agricultural land-base, supporting commercial farming and agro processing.
- Encouraging private investment, including the view of industrial and big business development as a key growth lever;

<sup>13</sup> The Real Economy Bulletin, Provincial Review 2016

<sup>14</sup> NDM Rural Development Plan (Draft)

- SMME support and development;
- Job creation through Community Works Programme and Extended Public Works Programme, especially with regard to environmentally beneficial projects;
- The need for developing the local human resource base;
- The need for an effective and efficient public transport systems that serves both rich and poor; and
- Align the legal framework to create a favourable regulatory environment to enable a transition to low carbon emission economy.

The comparative advantages for Emakhazeni are identified by NDM as Agriculture, Manufacturing, Trade, Transport and Communication, Finance and Business services, Community, Social and Personal Services.

Through responsible employment and income generation during the mining processes, economic benefit does accrue to the region and local communities. The mine would contribute to the local economy through its employee wages, procurement of local contractors and services, purchasing of water and electricity and by paying taxes to ELM.

To achieve the goal of sustainable economic development and job creation through the mining industry, government needs to ensure the development of basic skills; and ensure that service delivery and necessary infrastructure are not compromised or overlooked during the operation of the mine.

This section recognises the positive economic impact that the proposed Project can potentially achieve through creating employment opportunities. The economic impact is based on mining being a significant player in the provincial economy and the number of direct (continued employment at the actual mine) and indirect jobs (e.g. in the trade and transport sectors) that it would create. Therefore, except for direct employment that would generate income and increase local spending, people living in the vicinity of the study area would also be expected to benefit by the earnings of those employed by the mine and the local buying power in the area. This could further lead to subsequent indirect spin-offs for local businesses.

Local governments are becoming important actors as they take on many of the roles previously left to central government. Yet in many developing countries local governments are weak and ineffective; others are unrepresentative. Agreements negotiated solely between them and a mining company may not be recognized as legitimate by local people. At an administrative level, local governments often do not have the capacity for effective management of the collection and distribution of revenue, let alone the capacity to respond to issues such as the need for an integrated land use policy with a long-term perspective

#### Economic Impact

	Construction Phase	Operational Phase
<b>Magnitude</b>	Moderate +	Moderate +
<b>Duration</b>	Short-term	Long term
<b>Spatial</b>	Local	Regional
<b>Consequence</b>	Medium	High
<b>Probability</b>	Definite	Definite
<b>Significance</b>	Medium	High
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>Umsimbithi Mining should adopt a robust community and human resource development plan, to prevent the externalisation of social costs and reduced economic benefit in the labour sending communities.</li> <li>Local goods and services should be used as far as possible.</li> <li>Contractors' procurement procedures also have to favour local goods and services</li> <li>Collaborate with LLM on Local Economic Development initiatives</li> </ul>		

## 5.4 Demand for Employment and Inflow of Job Seekers

Wages in Mpumalanga are recorded to be slightly higher than in most other provinces with the exception of Western Cape and Gauteng. These good wages help to explain the high levels of in migration recorded by STLM. The average annual population growth in STLM is 4.4% compared to ELM's 0.4%. It was observed that the inflow of job seekers to settlements located in ELM is tightly controlled by the respective Ward Committees. This helps explain the substantial difference in population growth between these 2 neighbouring municipalities. Overall, Mpumalanga's population grew 37% from 1996 to 2015 compared to a national average of 35%.<sup>15</sup> It can therefore be concluded that the demand for employment and subsequent inflow of job seekers is a noteworthy trend associated with the mining industry in Mpumalanga which creates job opportunities. Word on the establishment of the proposed Project would draw interest from job seekers as would any other mining development and would therefore be a contributor to the population growth.

It is for this reason that the demand for employment and inflow of job seekers is considered a significant impact for this project. Close monitoring of the implementation of the Social and Labour Plan would be necessary to help mitigate the social and health effects that an increased population has for the region. Despite the socio-economic benefit that mining creates to some impoverished communities, it can also contribute to the disruption of local livelihoods and social disintegration of labour sending settlement. In particular, concerns relate to the provision of municipal services for the increased population, housing and safety and security. The indirect impact is therefore on the Municipal Administrations and whether they can adequately identify, cost, plan and implement projects that extend municipal services and implement housing solutions that prevent the social degeneration of a community. Research has shown that mining communities throughout South Africa are characterised by poor social conditions that include poverty, unemployment, poor housing and

<sup>15</sup> The Real Economy Bulletin, Provincial Review, 2016

infrastructure, prostitution and an influx of unaccompanied migrant labour. The health issues that relate to this scenario are high incidences of HIV and STIs, unwanted pregnancies, malnutrition, alcohol addiction and mental illness. These risks will be addressed in detail in the Health Impact Assessment for the study<sup>16</sup>.

Communities undergoing social disintegration have been observed to display some of the following behavioural patterns to a greater or lesser extent<sup>17</sup>:

- ❖ Family breakdowns, single parenthood, high teenage pregnancy rates.
- ❖ Low job participation with both high unemployment and unemployable rates.
- ❖ High alcohol and drug abuse.
- ❖ Low performance in all spheres of life including school and skills training.
- ❖ High crime rates and endemic violence at all levels of social interaction: family, inter-personal, neighbourhood and wider community.
- ❖ Despair and acceptance of the victim image.
- ❖ Flight of skills and positive role models from the townships into higher income areas.

The Umsimbithi eMakhazeni Mining Project would need to table a clear strategy within its Social and Labour Plan on how it would support the municipalities in mitigating these poor social conditions.

Demand for Employment and Inflow of Job Seekers		
	Construction Phase	Operational Phase
<b>Magnitude</b>	Moderate -	Moderate -
<b>Duration</b>	Long term	Long term
<b>Spatial</b>	Local	Regional
<b>Consequence</b>	Medium	High
<b>Probability</b>	Possible	Definite
<b>Significance</b>	Medium	Medium
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>• Early project (Operations) documentation outlining the potential benefit that locals can expect during the life of the project can help curb in-migration of job seekers.</li> <li>• The project developer needs to collaborate with ELM and STLM to initiate communications eliminating unrealistic employment expectations regarding the prospective mine.</li> <li>• A rural settlement management plan would benefit the local community and help mitigate the impact of the in-migration.</li> </ul>		

## 5.5 Change in Unemployment

The Umsimbithi eMakhazeni Mining Project indicates in the Social and Labour Plan that 199 semi-skilled labour will be employed in year 1 of the operations and this will increase to approximately 450

<sup>16</sup> Cronje, Local Communities and Health Disaster Management in the Mining Sector

<sup>17</sup> Dr Mamphela Ramphele

by year 4. Some limited additional temporary workers could be required during construction of the infrastructure. It is anticipated that a percentage of existing employees working at the Wonderfontein Colliery would continue in their employment at the new mining site.

The labour sending settlements are anticipated to include:

- Emakhazeni, Entokozweni, Siyathutuka, Emthonjeni, Mdala Old Township within Emakhazeni Local Municipality (ELM) and
- Malope Village, Mthuzi, Tokologo and Middleburg in Steve Tshwete Local Municipality (STLM).

The high toll fees paid at Machadodorp Toll Gate largely prevent the movement of labour from Emgwenya to work at mines located west of the Toll Gate.

Emahkazeni has a total population of 47 217 people of which 25% are unemployed (Census 2011). Youth unemployment is 32.2%, unemployment of economically active females 34.1% and male unemployment 19.8%

The unemployment rate in STLM is 19.7% which is a significant decrease from 35.4% in 2001. In the municipality, 107 069 people are economically active. The composite breakdown of unemployment in STLM shows youth unemployment rate of 27.1%, unemployment rate for females 27.8% and males 14.2% (Census 2011).

There is a significantly lower rate of unemployment in the Steve Tshwete Local Municipality in comparison to National unemployment levels which is possibly due to the greater number of mines located in close proximity to the settlements. Mpumalanga's economy is dominated by coal mining for export and Eskom power plants and the region benefitted from the commodity boom between 2003 and 2011. This can possibly explain the reason for the dramatic drop in unemployment between 2001 and 2011. Growth since 2011 has slowed down. 43% of the working age population in Mpumalanga is employed compared to the national figure of 40%.

From the above, the role the mining sector plays in creating employment is recognised as significant. The key objective of the Mpumalanga Growth and Development Path (MEGDP) is to foster economic growth that creates jobs, reduces poverty and inequality in the Province. Alleviating poverty through job creation and skill development is articulated in both STLM and ELM's Local Economic Development Strategies. Although it is not anticipated that the Umsimbithi Mining Project would create significantly more new job opportunities thereby benefiting low-income groups but will contribute towards supplementary job opportunities and thereby stimulating local economic growth. The proposed Project would sustain existing mining operations which are identified above as a significant player in local job creation.

This study identifies the role of job creation by the proposed Project as positive moderate. Mining is a trade off in resource utilisation with agriculture and the shrinking of job opportunities within this sector needs to be reckoned.

Change in unemployment		
	Construction Phase	Operational Phase
<b>Magnitude</b>	Moderate +	Moderate +
<b>Duration</b>	Short term	Long term
<b>Spatial</b>	Local	Local
<b>Consequence</b>	Medium	Medium
<b>Probability</b>	Possible	Possible
<b>Significance</b>	Medium +	Medium +
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>• Ensure and maximise the use of local labour and contractors.</li> <li>• Development and implement a communications strategy regarding a recruitment policy that can serve to encourage local employment and reduce the potential influx of jobseekers to the area.</li> <li>• Ensure Local Community and Government Leaders have the correct expectations of the offerings from the mine.</li> <li>• Ensure implementation of the Skills Development Plan.</li> <li>• Ensure actual implementation of Umsimbithi Mining's Supplier Development Programme set out in SLP where preferred supplier status will be given to local SMMEs, HDSA entrepreneurs and local service providers.</li> </ul>		

## 5.6 Impact on Daily Living and Movement Patterns

As determined in the scoping stage, direct access to all Mine Areas will be via main roads and the N4 National Highway. As far as possible, existing access roads will be utilised, and where not possible, these will be constructed as a two-by-two road way, operating in both directions. Where access roads are to be constructed, these will be 4m wide gravel road with storm water earth channels and mitre drains to protect the road structure from flood damage. Intersections will be properly designed to provide safe entry and exit into the mining area. Approvals from the provincial roads authority will be obtained where necessary and WULs will be applied for where haul or access roads are anticipated to impact on water courses

Haul roads for the dump trucks will be 32 m wide with safety berms either side. The road pavement structure and geometric design will be based on the largest vehicle to be used during the operations. Dust from these roads will be controlled by applying road binders and regular watering with water tankers. Storm water drainage and culverts are designed to protect the road structure itself, and to divert the water to natural water courses where possible.

The final route for the haul roads will only be determined on completion of the final mine design. Depending on the preferred route selected, land owners may not be directly affected as the selection of routes will be done so as to impact minimally on individual properties. The preferred transportation of coal option is via haul truck to the final destination. This does imply greater impact due to emissions, vehicle mobility and dust from the use of gravel roads.

With the increased daily movement of trucks, vehicle related fatalities and injuries are a concern. Unlike forces of nature or natural disasters, vehicle related incidents are much more preventable.

Speed management should form part of the overall risk management approach that mining operations should have in place and which they actively promote. Mine management has the responsibility to ensure that work areas, are safe.

During the construction phase the movement of the workers and heavy vehicles to and from the site is considered to have a negative impact on the biophysical environment. This is because the project is a Greenfields project resulting in a significant change from the current environmental status and the impact of dust and noise on current agricultural resource use. The impact during the construction phase is anticipated for a short duration. During the operational phase, impacts will be mitigated through recommendations made by both the air quality and transportation specialist studies. It is anticipated that the increased movement patterns to and from the mining area are deemed significant due to the imposed change to the current character of the immediate environment.

The Health Impact Assessment would consider the raised level of road accidents, and associated pedestrian fatalities and other injuries linked to the increased crossing of the N4 highway by haul trucks.

Impact of Daily Living and Movement Patterns		
	Construction Phase	Operational Phase
<b>Magnitude</b>	Moderate -	Major -
<b>Duration</b>	Short term	Long term
<b>Spatial</b>	Local	Local
<b>Consequence</b>	Medium	Medium
<b>Probability</b>	Possible	Possible
<b>Significance</b>	Moderate +	High -
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>Dust control measure to be maintained curbing the impact of dust from use of the gravel roads.</li> <li>Road safety awareness to be incorporated as part of the Mine's Community Development Programme.</li> <li>Road Safety criteria and principles to be incorporated into proposed Project's general risk management plan.</li> <li>The mining sites should be clearly marked and 'danger' and 'no entry' signs should be erected.</li> <li>Speed limits on the local roads surrounding the mining areas should be enforced.</li> <li>Speeding of construction vehicles must be strictly monitored and drivers penalised.</li> </ul>		

## 5.7 Residential Proximity

Mining operations in the area between Middleburg and Emakhazeni are located on land that has been farmed for a number of years, predominantly crop farming. The proposed mining development borders farms and homesteads. The following homesteads and residential structures are in close proximity to the mine. The full impact of the mining operations to these residences will be addressed in other specialist Reports in the EIA dealing with air quality, blasting and ground water.

Pit BE:

- There are between 10 -15 residential informal structures on the Remaining Extent of the farm Breytenbachsrus 421 JS and on Wildfontein 428 JS Portion 5, north of the open Pit BE. The

R104 will form a barrier but it is expected that the mining operations at pit BE will have some additional adverse influences on these property owners and residents, although possibly limited.

- The residence of Mr Johan Steele Leeuwfontein 431 JS Portion 4 is located south of the open Pit BE. The N4 would create some buffer between the homestead and the open pit mining area but there can be additional impact (visual, increased noise) although not perceived to be problematic. The extent of impact of noise and dust will depend on prevailing winds as documented in the air quality report and with implementation of recommended mitigation; these impacts could possibly be limited.



**Figure 12: Residential Proximity to Pit BE**



**Figure 13: One of the Farm Labourer dwellings on Leeuwfontein 431 JS Portion 4**

#### Open pit and underground mining for Pit BF and BG:

- This site is predominantly mined underground, hence the visual intrusiveness is regarded as a low impact. The residences of Mr Gerrit Roos on farm Leeuwbank 427 JS Portion 5 could be impacted by vibrations and dust although possibly limited.
- To the North and North West of the BF & BG pit is the Wonderfontein Agri Centre and Wonderfontein Station Complex. This complex houses the local clinic that services the region. The BF stockpile area and infrastructure area are in fair proximity to these structures. Wonderfontein is buffered by the N4 and railway line and it is not anticipated that there would be no adverse impacts as a result of the mining operations. This would need to be verified with a review of the Air Quality, Blasting and Ground Water Reports

#### Open pit and underground mining for Pit BD and BA:

- This site is predominantly mined underground. A small homestead is located on R/E of Paardeplaats 425 JS
- Graves are located on Rietvalley 387 JS Portion 2
- Exxaro Mine's resettlement plan has identified the southern portion of the R/E of Paardeplaats 425 JS as an area to resettle farmworkers impacted by its mining operations. This is directly adjacent to the mining operations of the proposed Project envisaged for BD and the settlement would be directly impacted by the mine operations.

#### Underground mining AA:

- This site will be mined underground. No residential homesteads are identified in close proximity to this site.

The intrusion elements of the proposed Project's mining operations are limited as there are with the exception of the Wonderfontein settlement, no large informal residential settlements located within the immediate surroundings of the operations. The main impacts of increased noise, additional visual impacts, the possible impact of blasting on structures and increased dust pollution are borne by the farm owners. Worker accommodation (with the exception of those situated north of pit BE and those that will be resettled) is located a distance from the mining operations. It is anticipated that these impacts will be mitigated to result in a low impact.

Residential Proximity		
	Construction Phase	Operational Phase
<b>Magnitude</b>	Major -	Major -
<b>Duration</b>	Short term	Long term
<b>Spatial</b>	Local	Local
<b>Consequence</b>	Medium	Medium
<b>Probability</b>	Possible	Possible

Residential Proximity		
Significance	Moderate -	High -
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>Monitoring of the air quality and water quality and quantity should continue to limit any possible negative impacts on the human environment thereby ensuring that human health and the environment are protected.</li> <li>Intrusion impacts should be mitigated through sound environmental practices.</li> <li>Dust suppression methods should be implemented.</li> </ul>		

## 5.8 Resettlement of Farm Workers

Proposed mining activities on the farms Leeuwfontein 431 JS Portions 10, 2 and 4, Leeuwbank 427 JS Portion 4 and 18 and Rietvalley 387 JS Portion 2 and 5 impacts homesteads and farm workers currently living on the farms and a relocation plan would need to be prepared should the mining operations go ahead on all sites.

Just over half of the farmworkers are only resident on Leeuwbank 427 JS Portion 0 during the week giving them close access to work. All 5 families resident on Leeuwfontein Portion 4 reside permanently on the farm together with their families and livestock. 14 Grave sites are also located on this farm. A total of 35 labourers are employed by the owner of Leeuwbank Portion 0. Their residences are not directly impacted by the proposed mining operations. 8 Labourers are employed by the farm owner of Rietvalley 387 JS Portion 2. No farm workers residences are impacted by the proposed open pit mine.

For the majority of the farm workers in the open pit and underground mines, impacts to most land uses would be temporary, such as the removal of livestock from grazing areas during blasting or temporary heavy equipment operations.

Resettlement of Farm Workers	
Magnitude	Moderate +
Duration	Long term
Spatial	Regional
Consequence	High
Probability	Definite
Significance	High -
<b>Mitigation:</b>	
<ul style="list-style-type: none"> <li>Resettlement Plan for 5 Labourers Homesteads located on Leeuwfontein Portion 4.</li> </ul>	

## 5.9 Safety and Security

Community safety and security issues relate to the inflow of workers during the construction phase which is often associated with a surge in temporary employment. During this phase, members of the surrounding community are mostly impacted due to the movement of contractors and their employees, transportation of goods and materials, heavy vehicles and machinery and the use of earth moving equipment.

Opening up of the area and the construction of the new haul roads and the transportation of goods along these roads exposes the local community. It changes the nature of their environment. Other safety and security risks relate to:

- Increased traffic in the area, road accidents, pedestrians, movement of vehicles transporting construction personnel. Warning signs would have to be posted to alert residents and road users to possible dangers
- Workers trespassing private property in an attempt to access areas of work.
- 

As limited additional employees are foreseen for short periods, and as the majority of the activities would take place within the mining rights area, few added safety and security risks are foreseen in the long term. Neighbouring residents do however remain concerned about the possible indirect impact of the increase in crime and trespassing on the surrounding private properties due to a possible increase in people movement.

Concerns can be raised by the newly resettled Wonderfontein community being approached to sub-let rooms to accommodate miners and job seekers. One would possibly see an increase in informal living structures erected in and around the Wonderfontein station and Clinic area which would be in close proximity to the mining operations.

Should these developments not be contained, there would be an intensifying safety and security problem.

Safety and Security Related Impacts		
	Construction Phase	Operational Phase
<b>Magnitude</b>	Moderate -	Moderate -
<b>Duration</b>	Short term	Long term
<b>Spatial</b>	Local	Regional
<b>Consequence</b>	Medium	Medium
<b>Probability</b>	Possible	Possible
<b>Significance</b>	Moderate -	High -
<b>Mitigation:</b>		
<ul style="list-style-type: none"> <li>• Early Communications outlining opportunities and benefits associated with the proposed mine to help curb in-migration of job seekers.</li> </ul>		

- Mining operations to incorporate as part of their risk management plan an in-migration management strategy that is prepared in collaboration with ELM.
- Umsimbithi eMakhazeni Mining Project should discuss the safety and security issues, as well as construction schedule with the local community leaders and local police service.
- The mining area should be fenced and access to the area should be controlled to avoid animals or people entering the area without authorisation.
- Workers should make use of protective clothing and equipment that would effectively prevent bodily injuries.
- Workers should make use of formal approved access roads when travelling to work

## 6. IMPACT ASSESSMENT AND MITIGATION MEASURE

No.	Activity	Impact Description	BEFORE MITIGATION						Cumulative Impact
			Magnitude	Duration	Spatial Scale	Consequence	Probability	SIGNIFICANCE	
1	Change in Landuse from Agriculture to Mining	Direct impact on ±1 420ha of agricultural land where 1 120ha will be open pit or combination of open pit and underground.	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes
	Cummulative impact - Change in Landuse from Agriculture to Mining	With a regional land-use planning perspective - Agriculture is earmarked as an equally important sector for the district. Impact on the Wonderfontein Agricultural node (NDM tertiary activity node) identified to support and develop viable agricultural practices, eco-tourism & agri-processing	Major -	Long Term > 5 years	Regional	High	Possible	High	Yes
2	Increased mining towards North Eastern parts of Emakhazeni	Within NDM, the primary cluster of mining activities is located around Delmas, GaNala/Kriel, Hendrina, Middelburg and Witbank. Umsimbithi Mining project is seen to fall within the 'second cluster' of mining developing between Middelburg and Emakhazeni. The Mining encroachment on pristine natural environment of the Eastern Escarpment would be a concern.	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes

No.	Activity	Impact Description	BEFORE MITIGATION						Cumulative Impact
			Magnitude	Duration	Spatial Scale	Consequence	Probability	SIGNIFICANCE	
	<b>Cumulative impact - Mining development towards North Eastern Region</b>	It is difficult to ascertain future plans and activities extending mining operations towards the East. Mining applications to the north of eMakhazeni towards Dullstroom and Emgwenya and the then subsequent cumulative impact would be a major concern to Emakhazeni as this would intrude into the tourism triangle.	Major -	Long Term > 5 years	Regional	High	Possible	High	Yes
3	Mining activity in Greenfields area	Impact on sense of place and change in the character of the environment from agriculture to mining.	Major -	Long Term > 5 years	Regional	High	Definite	High	Yes
	<b>Cumulative impact - Mining activity in Greenfields area</b>	Cumulative impact on the sense of place where the tipping point is reach and there is the selling out of adjacent agricultural properties and a dominance of mining activities reducing agricultural practices and reducing food production from the area.	Moderate -	Long Term > 5 years	Regional	Medium	Definite	Medium	Yes
4	Change in average Household Income	Employment opportunities and access to income	Moderate +	Short Term < 18 months	Regional	Medium	Possible	Medium	No
5	Change in unemployment	Improved household income	Moderate +	Short Term < 18 months	Regional	Medium	Possible	Medium	No
6	Change in % households living below poverty line	Marginal improvement of household poverty levels	Minor +	Long Term > 5 years	Regional	Medium	Possible	Medium	No

No.	Activity	Impact Description	BEFORE MITIGATION						Cumulative Impact
			Magnitude	Duration	Spatial Scale	Consequence	Probability	SIGNIFICANCE	
7	Inflow of Job-Seekers	Stimulation of migration into the area and extension of informal housing areas and pressure on municipal services.	Moderate -	Long Term > 5 years	Regional	High	Definite	High	Yes
8	Inflow of Job-Seekers and Workforce	Increased demand for housing. Externalisation of social costs - densification of settlements and associated social problems	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes
9	Inflow of Job Seekers and Workforce	Increased pressure on Clinics and Health Systems	Major -	Long Term > 5 years	Regional	High	Definite	High	Yes
10	Inflow of Job Seekers and Workforce	Increased demand water and sanitation services	Moderate -	Long Term > 5 years	Regional	High	Possible	High	Yes
11	Utilisation of local goods and services	Increased demand for goods and services multiplying the economic benefit through creating indirect jobs.	Moderate +	Long Term > 5 years	Regional	High	Possible	High	Yes
	<b>Cumulative impact: local goods and services</b>	With further development of the 'second cluster' of mining, the local economy within Emakhazeni could be stimulated with service companies being based in Emakhazeni as opposed to Steve Tshwete	Moderate +	Long Term > 5 years	Regional	High	Possible	High	Yes
12	Increased daily living movement patterns	Increased road accident injury and fatalities	Major -	Long Term > 5 years	Site or Local	High	Possible	High	No
13	Increased traffic on provincial roads	Road safety	Major -	Medium Term > 18 months < 5 years	Site or Local	Medium	Possible	Medium	No

No.	Activity	Impact Description	BEFORE MITIGATION						Cumulative Impact
			Magnitude	Duration	Spatial Scale	Consequence	Probability	SIGNIFICANCE	
14	Mine is granted mining rights for listed farms	Impact on farming and livelihoods activities for Landowners	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes
		Loss of employment for farm workers	Moderate -	Medium Term > 18 months < 5 years	Regional	Medium	Definite	Medium	Yes
	Cumulative impact - Mine granted mining rights for farms in the area	Similar to the cumulative impact on the sense of place where the tipping point is reach and there is the selling out of adjacent agricultural properties and a dominance of mining activities reducing agricultural practices and reducing food production from the area.	Moderate -	Long Term > 5 years	Regional	Medium	Definite	Medium	Yes
15	Exposure to hazardous emissions and dust	Exceedances of PM <sub>10</sub> and PM <sub>2.5</sub> are expected over the areas of Siyathuthuka, Belfast and the Exxaro resettlement area. This is a health risk for residents in these areas.	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes
	Cumulative impact - Exposure to hazardous emissions and dust	Long term health impacts associated with poor air quality.	Major -	Long Term > 5 years	Site or Local	High	Definite	High	Yes

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
<b>Construction and Operation</b>									
1	Change in Landuse from Agriculture to Mining	Direct impact on ±1 420ha of agricultural land where 1 120ha will be open pit or combination of open pit and underground.	Moderate +	Long Term > 5 years	Site or Local	Medium	Possible	Medium	Engagement with District and Local Government Spatial Planners to mitigate disturbances to Agricultural hub
	<b>Cummulative impact</b> - Change in Landuse from Agriculture to Mining	With a regional land-use planning perspective - Agriculture is earmarked as an equally important sector for the district. Impact on the Wonderfontein Agricultural node (NDM tertiary activity node) identified to support and develop viable agricultural practices, eco-tourism & agri-processing for the region	Moderate -	Long Term > 5 years	Site or Local	High	Possible	High	For Agriculture and Mining to co-exist, Umsimbithi Mining's compliance with environmental monitoring recommended by the EIA is critical. The local economy is dependent on performance in both sectors.

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
Construction and Operation									
2	Increased mining towards North Eastern parts of Emakhazeni	Within NDM, the primary cluster of mining activities is located around Delmas, GaNala/Kriel, Hendrina, Middelburg and Witbank. Umsimbithi Mining project is seen to fall within the 'second cluster' of mining developing between Middelburg and Emakhazeni. The Mining encroachment on pristine natural environment of the Eastern Escarpment would be a concern.	Moderate -	Long Term > 5 years	Regional	High	Possible	High	The Regional Spatial Plan prepared by NDM prioritises these areas for Agriculture and Tourism. There would need to be compliance with the mitigation measure recommended for maintaining water quality, biodiversity, air quality so to contain the impact of the mining operation within its immediate environment.
		It is difficult to ascertain future plans and activities extending mining operations towards the East. Mining applications to the north of eMakhazeni towards Dullstroom and							

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
Construction and Operation									
		Emgwanya and the then subsequent cumulative impact would be a major concern to Emakhazeni as this would intrude into the tourism triangle.							
3	Mining activity in Greenfields area	Impact on sense of place and change in the character of the environment from agriculture to mining.	Moderate -	Long Term > 5 years	Regional	High	Definite	High	Operate within mining rights allocation and according to Environmental Management Plan
	<b>Cumulative impact -</b> Mining activity in Greenfields area	Cumulative impact on the sense of place where the tipping point is reached and there is the selling out of adjacent agricultural properties and a dominance of mining activities reducing agricultural practices and reducing food production from the area.	Moderate -	Long Term > 5 years	Regional	Medium	Definite	Medium	The successive, incremental and combined impact of more farms being obtained for mining operations will have a collective impact on the Agricultural sector of the region. Collaboration between DMR and Local Government Planners is essential for the issuing of mining rights. When issued, need to operate within mining rights allocation and according

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
<b>Construction and Operation</b>									
									to Environmental Management Plan
4	Change in average Household Income	Employment opportunities and access to income	Moderate +	Long Term > 5 years	Site or Local	Medium	Possible	Medium	Policy for employment of local labour, youth and women
5	Change in unemployment	Improved household income	Moderate +	Long Term > 5 years	Regional	High	Possible	High	Policy for employment of local labour, youth and women
6	Change in % households living below poverty line	Marginal improvement of household poverty levels	Minor +	Long Term > 5 years	Regional	Medium	Possible	Medium	Policy for employment of local labour, youth and women
7	Inflow of Job-Seekers	Stimulation of migration into the area and extension of informal housing areas and pressure on municipal services.	Minor -	Medium Term > 18 months < 5 years	Regional	Low	Possible	Low	Early Communications and Community Engagement outlining potential benefit and employment opportunities
8	Inflow of Job-Seekers and Workforce	Increased demand for housing. Externalisation of social costs - densification of	Major +	Long Term > 5 years	Site or Local	High	Possible	High	Maintain social monitoring within local community and implement mitigation plan in collaboration with

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
<b>Construction and Operation</b>									
		settlements and associated social problems				Red		Red	LLM and TA to manage the impact. Adapt SLP if necessary
9	Inflow of Job Seekers and Workforce	Increased pressure on Clinics and Health Systems	Major -	Long Term > 5 years	Regional	High	Possible	High	Adoption of robust Community Monitoring and Development Programme
10	Inflow of Job Seekers and Workforce	Increased demand water and sanitation services	Minor -	Long Term > 5 years	Regional	Medium	Possible	Medium	Collaboration with LLM and assistance with the development of water and sanitation services in the local communities
11	Utilisation of local goods and services	Increased demand for goods and services multiplying the economic benefit through creating indirect jobs.	Major +	Long Term > 5 years	Regional	High	Possible	High	Contracting service companies based in Emakhazeni as opposed to Steve Tshwete could assist in stimulating the local economy.
	<b>Cumulative impact: local goods and services</b>	With further development of the 'second cluster' of mining, the local economy within Emakhazeni could be stimulated with service companies being based in Emakhazeni as opposed to Steve Tshwete	Major +	Long Term > 5 years	Regional	High	Possible	High	Provide comprehensive support to cooperatives and SMMEs to exploit opportunities in the mining value chain.

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
<b>Construction and Operation</b>									
12	Increased daily living movement patterns	Increased road accident injury and fatalities	Major -	Medium Term > 18 months < 5 years	Site or Local	Medium	Possible	Medium	Road safety awareness to be incorporated into the mine's Community Development Programme
13	Increased traffic on provincial roads	Road safety	Minor -	Medium Term > 18 months < 5 years	Site or Local	Low	Possible	Low	Institute speed limits in and around the mine and for the R518 for sections close to the mine entrance.
14	Mine is granted mining rights for listed farms	Impact on farming and livelihoods activities for Landowners	Minor -	Medium Term > 18 months < 5 years	Site or Local	Low	Possible	Low	Negotiated compensation mitigates the loss of income
		Loss of employment for farm workers	Moderate -	Medium Term > 18 months < 5 years	Site or Local	Medium	Possible	Medium	Loss of employment in Agricultural Sector - Possible re-deployment on the mine
	<b>Cumulative impact - Mine granted mining rights for farms in the area</b>	Similar to the cumulative impact on the sense of place where the tipping point is reach and there is the selling out of adjacent agricultural properties and a dominance of mining activities reducing agricultural practices and reducing food	Moderate -	Medium Term > 18 months < 5 years	Site or Local	Medium	Possible	Medium	Loss of employment in Agricultural Sector - Possible re-deployment on the mine

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	Significance	
<b>Construction and Operation</b>									
		production from the area.							
15	Exposure to hazardous emissions and dust	Excedances of PM <sub>10</sub> and PM <sub>2.5</sub> are expected over the areas of Siyathuthuka, Belfast and the Exxaro resettlement area. This is a health risk for residents in these areas.	Major -	Long Term > 5 years	Site or Local	Medium	Possible	Medium	Compliance with stringent environmental criteria is critical. With mitigation measures in place, excedances of air quality regulations is expected.
	<b>Cumulative impact - Exposure to hazardous emissions and dust</b>	Long term health impacts associated with poor air quality.	Major -	Long Term > 5 years	Site or Local	Medium	Possible	Medium	Compliance with stringent environmental criteria is critical. With mitigation measure in place, excedances of air quality regulations is expected.
<b>Decommissioning and Closure</b>									
1	Comprehensive and sensitive consultation with stakeholder groups from the local communities,	Ease the transition from employment to unemployment, re-skilling, job search services	Major -	Short Term < 18 months	Regional	Medium	Possible	Medium	Mitigation beyond initial activity will be limited

No.	Activity	Impact Description	AFTER MITIGATION						Mitigation measures / Recommendations
			Magnitude	Duration	Spatial Scale	Consequence	Probability	SIGNIFICANCE	
<b>Construction and Operation</b>									
	government departments and other identified groups								
2	Capacity building to assist retrenched employees to set up their own businesses or assist local business to expand their operations	Reduced impact due to loss of income from the mine	Major -	<i>Short Term &lt; 18 months</i>	Regional	Medium	Possible	Medium	Mitigation beyond initial activity will be limited
3	Continued mentorship of empowerment groups and local community structures started during the life of the mine in line with the needs of these groups/structures using ad-hoc mechanisms already in place	Discouraged employees	Major -	<i>Short Term &lt; 18 months</i>	Regional	Medium	Possible	Medium	Mitigation beyond initial activity will be limited
4	Provision of portable skills to employees facing retrenchment	Increase opportunities for retrenched employees	Major -	<i>Short Term &lt; 18 months</i>	Regional	Medium	Possible	Medium	Mitigation beyond initial activity will be limited

## 7. DECOMMISSIONING AND CLOSURE

Decommissioning and Closure			
Decommissioning of all surface infrastructure and rehabilitation of all disturbed surface areas	<p>Release of GHG due to the oxidisation of mine dumps containing carboniferous</p> <p>Medium (-)</p>	<ul style="list-style-type: none"> <li>Carboniferous material will be sealed</li> <li>Rehabilitation monitoring and maintenance will be applied to allow for revegetation and therefore carbon dioxide uptake to be reinstated</li> </ul>	Low (-)
	<p>Release of GHGs due to the removal of infrastructure using heavy machinery</p> <p>Medium (-)</p>	<ul style="list-style-type: none"> <li>Where possible infrastructure will be repurposed</li> </ul>	Low (-)
	<p>Compaction of soil and contamination of soil resources from heavy vehicles</p> <p>Low (-)</p>	<ul style="list-style-type: none"> <li>Reinstatement of stored soils onto areas of disturbance where infrastructure has been demolished</li> <li>Contour and stabilise slopes to be free- draining</li> <li>Cultivation of growing medium, the planting of required vegetative cover and irrigation if required</li> </ul>	Low (-)
	<p>Potential for establishment of alien invasive vegetation</p> <p>Medium (-)</p>	<ul style="list-style-type: none"> <li>Ensure the removal of the alien invasive vegetation encountered on the rehabilitated area</li> <li>Regular inspection of established vegetation</li> </ul>	Low (-)
	<p>Pollution of surface water resources during decommissioning</p>	<ul style="list-style-type: none"> <li>The stormwater management infrastructure, including the PCD, will be decommissioned last to ensure adequate stormwater</li> </ul>	Low (-)

Decommissioning and Closure			
	activities Low (-)	<p>management during the rehabilitation phase</p> <ul style="list-style-type: none"> <li>• Erosion protection measures will be implemented at steep areas</li> <li>• Spill kits will be available and hydrocarbon spills will be cleaned up immediately</li> <li>• All traces of hydrocarbons and residual waste will be removed before infrastructure is demolished</li> </ul>	
	Increase in dust fallout Medium (-)	<ul style="list-style-type: none"> <li>• Regular watering of the site roads</li> <li>• Dressing off of tip faces, unused roads and disturbed areas</li> <li>• Minimising unnecessary disturbance of non-operational areas</li> <li>• Use of chemical additives to control dust to be employed if necessary under BATNEEC (Best Available Techniques Not Entailing Excessive Cost) principles.</li> </ul>	Low (-)
	General increase in ambient noise levels Medium (-)	<ul style="list-style-type: none"> <li>• Regular planned mobile plant maintenance, with special attention paid to the maintenance of engine efficiency and silencer effectiveness.</li> <li>• Regular planned vehicle services</li> </ul>	Low (-)
	Loss of employment and enterprise development opportunities High (-)	<ul style="list-style-type: none"> <li>• Develop and implement Labour and Human Resources Plan (LHRP) that addressed the impacts associated with retrenchment, job losses and</li> </ul>	Medium (-)

Decommissioning and Closure			
		<p>reduced demand for local goods and services</p> <ul style="list-style-type: none"> <li>• Develop a closure plan which will aim to reinforce the objectives of the SLP by reducing the reliance on the mine for employment by promoting skills transfer to ensure alternative livelihoods.</li> </ul>	

## 8. RECOMMENDATIONS AND CONCLUSION

Agriculture, tourism and mining all contribute to the economic environment that sustains communities living within the boundaries of Emakhazeni Local Municipality. From a spatial planning perspective, both ELM and its neighbouring STLM have identified the need to encourage diversification of the economy to build the income base in a manner, that poverty and unemployment can be addressed. Both municipalities want to see the development of the tourism and agricultural sectors as significant contributors to achieve this objective.

This does not disregard the Mining sector's contribution to employment for the region. It cautiously recognises that together with the employment generated by the mines, potentially comes many social problems associated with labour sending communities. The question asked therefore, is how will the proposed mining activity contribute to or detract from the economic progress, stagnation or regression of the area and ensure the well-being of the communities in the region?

The economic effects of the Umsimbithi eMakhazeni Mining project can be considered positive due to the employment opportunities the extended mining operations can create. However, the degradation and level of poverty observed with the towns of Emakhazeni, Emgwenya and Machadodorp leaves one with the question if these local towns show any signs of benefit from current mining operations already operational in the region.

The other big question is the trade-off of land between mining and agriculture. Agriculture is a significant sector for the region and the development of emerging farmers is recognised. Together with this, local communities (as seen in the number of livestock camps erected on the boundaries of Siyathuthuka), and farm labours demonstrate their noteworthy involvement in small scale livestock farming. A key concern is the extent of impact the mining operations will have on Wonderfontein rural node and the surrounding farms. This is identified as an agricultural hub that holds enormous potential for intensified agricultural activity in the region.

The second big question is the encroaching impact on an area known for its pristine natural character which draws a significant number of tourists to the area and is considered the gateway to tourism in the Lowveld area and Kruger National Park. Dullstroom presents a superb case study on how tourism successfully creates local employment and preserves the natural environment.

From the socio-economic study, it can be concluded that region needs:

- Means to eliminate poverty levels (sustainable incomes and a growing economy)
- A diversified economy and
- Infrastructure development (Depredation of infrastructure in 3 of the towns in ELM)

The above can be offered through the extension of Umsimbithi Mining Operations and the granting of the mining rights. Together with the outcomes of the specialist studies on Biodiversity, Ground Water, Air Quality and Health Impact Assessment the EIA would recommend a way forward.

## 9. Expertise of specialist

Pamela Joan Taylor holds a BA Honours degree in Geography and has 17 years' experience of working with Local Government and Community Development Stakeholders. Successfully completed projects have predominantly focused on water and sanitation problems, upgrading of housing and informal settlements, and free basic water and sanitation policy. There was a large element of Local Government Capacity Building for Water Services, as well as Community Stakeholder Capacity Development associated with these projects. Pam (then called Pam Baber) grew up in the Waterberg District. She started her professional career with Consultburo (Pty) Ltd as a social scientist. Recently she was responsible to scope and undertake the socio-economic assessments of 19 informal settlements located in and around the mining towns of Rustenburg and Madibeng in North West Province. All 9 settlements near Rustenburg housed labour predominately employed by the mines. She was also involved in establishing a platform for collaborative engagements between Private Sector and Government Partners working within the Water Sector.

## 10. References

Gareth Butler, May 2012, University of Johannesburg, An Assessment of the Social and Economic Impacts of Tourism Development in Dullstroom, Mpumalanga

Cronjé, F., Reyneke, S. & Van Wyk, D., 2013, 'Local communities and health disaster management in the mining sector', Jàmbá: Journal of Disaster Risk Studies 5(2), Art. #78, 12 pages.

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Emakhazeni Local Municipality: Local Economic Development Strategy 2016/2020

Emakhazeni Local Municipality: Integrated Development Plan 2017 - 2022

Steve Tshwete Local Municipality: Local Economic Development Strategy 2017

Department of Rural Development and Land Reform Strategic Plan 2011 – 2014

Draft Mpumalanga Growth and Development Path, February 2011

Provincial Treasury: Socio-Economic Review and Outlook Mpumalanga 2015

Nkangala District Municipality: Draft Rural Development Plan 2016

Department of Rural Development and Land Reform: Strategic Plan 2015 - 2020

# **ANNEXURE A**

## **Comments and Response Report: Final Scoping**

**Comments and Response Report: Final Scoping**

Interested and Affected Parties		Date of comments received	Issues raised	EAPs response to issues as mandated by the applicant	Consultation Status (As disclosed in the EAP response.)	Category
Name of Individual	Consulted					
<b>Landowners</b>						
Mr Gerrit Roos Leeuwbank 427 JS Portions 2, 4, 5, 6 17, RE Zoekop 426 JS Portion 6	One on one	14 August 2017	There are 35 people working on my farm, about 60% stay in the compound and go home on weekends.	Thank you for the information. The socio-economic study will take into consideration the impact on the farm workers.. It is our understanding that there will be just and equitable compensation where people have to be re-located.		Social Impact Assessment
Mr Louis Bezuidenhout Wonderfontein 428 JS Portions 13,19, 20 RE	One on one	14 August 2017	I have 25 workers on my farm, 50% stay on the farm in the week and go home on weekends.	Thank you for the information. As part of the socio economic study consideration will be made of the impact for these farm workers.		Social Impact Assessment
Mr Gerrie du Toit Leeuwfontein 431 JS Portions 1, 2, 10, 14, Springboklaagte 416 JS, 11, Klienfontien 432 JS Portion 15, 24, 4, 5 Grootlagte 449 JS Portion 7	One on one	21 August 2017	I have six families staying on the property that work at the ALZU Petroport. The mine will make it impossible for them to live there.	Thank you for the comment. The impacts on these families will be assessed in the EIA.		Social Impact Assessment EAP
Mr Kobus Prinsloo GENERAALSDRAAI 429 JS Ptn 10	One on one	14 September 2017	Influx of people will result in an increase of crime	We acknowledge the concern associated with an influx of job seekers into the area and the increased mobility of people in your area. The EIA does consider the security impact for the receiving communities located in close proximity of the mine.		Social Impact Assessment
Gawie van Rensburg Wonderfontein Farmers Association	One on one	14 September 2017	The security is an issue on the farms as there is normally an influx of people associated with a new mine.	Influx will be assessed in the social impact assessment. We acknowledge the concern associated with an influx of job seekers		Social Impact Assessment

Interested and Affected Parties		Date of comments received	Issues raised	EAPs response to issues as mandated by the applicant	Consultation Status (As disclosed in the EAP response.)	Category
Name of Individual	Consulted					
Grootlaagte 449 JS Portions 4&18				into the area. The SIA does consider the security impact for the receiving communities located in close proximity of the mine.		
Mrs Barbara Brisley Paardekraal 422 JS Ptn 4	One on one	14 September 2017	At the moment the land is being rented, if this stops as a result of the mine this will be a negative impact for us.	This will be assessed in the specialist studies and EIA We acknowledge that your farm is a neighbouring farm to the mining development. The EIA will endeavour to establish any unfair disproportionate burden imposed by the proposed mining development..		Social Impact Assessment
Mrs Barbara Brisley Paardekraal 422 JS Ptn 4	One on one	14 September 2017	We could create a village on our property for the people to live in.	The comment is noted and thank you for the information. It is anticipated that the labour sending settlements will be Belfast, Siyathuthuka, Middelburg, Malope Village and Mtthuzi settlement..		Social Impact Assessment
Mrs Barbara Brisley Paardekraal 422 JS Ptn 4	One on one	14 September 2017	We could turn our property into a truck stop for the coal trucks with access to the highway east and west.	The comment is noted.		Social Impact Assessment
Mrs Barbara Brisley Paardekraal 422 JS Ptn 4	One on one	14 September 2017	At the moment we get pension money from the rental of the farm.	The comment is noted. It is our understanding that fair and adequate compensation is provided by the mine where there is a direct impact. The mine will attempt to mitigate impacts as far as possible for the areas indirectly impacted by the mine.		Social Impact Assessment
Mr Francois Barnard Financial Manager Aledlox Properties (Pty) LTD Wonderfontein Mills of Wonderfontein 428 JS Ptn RE of Portion 18	Registration form	14 September 2017	Work losses if mills must close.	This will be assessed in the specialist studies and EIA This will be assessed as part of the impact assessment of agriculture in the region..		Social Impact Assessment
Mr Francois Barnard Financial Manager	Registration form	14 September 2017	The mills are security for bank loans, this can result in bank loan defaults.	The value of the Wonderfontein Rural Node is recognised in the study. The overall impact of the change in agricultural activities in the area and subsequent impact on the operations of the mill has not been scrutinised		Social Impact Assessment

Interested and Affected Parties		Date of comments received	Issues raised	EAPs response to issues as mandated by the applicant	Consultation Status (As disclosed in the EAP response.)	Category
Name of Individual	Consulted					
Aledlox Properties (Pty) LTD  Wonderfontein Mills  of Wonderfontien 428 JS Ptn RE of Portion 18				in detail but the overall impact on the Wonderfontein Hub has been noted in the S/E study..		
Mr Francois Barnard  Financial Manager  Aledlox Properties (Pty) LTD  Wonderfontein Mills  of Wonderfontien 428 JS Ptn RE of Portion 18	Registration form	14 September 2017	Currently a company hires the land and the mills, if this contract is cancelled this will result in a loss of rental income.	This will be assessed in the specialist studies and EIA. This will be assessed as part of the impact assessment of agriculture in the region. The EIA will endeavour to establish any unfair disproportionate burden imposed by the project		Social Impact Assessment
<b>Suggestions for how impacts should be managed.</b>						
<b>Farm Occupiers</b>						
Mr Piet Nkosi  Leeuwfontein 431 JS	One on one	18 October 2017	Is there a possibility that we will be relocated? Should we be relocated, where will we be relocated to?	Should the mine go-ahead, then Farm dwellers located on land directly impacted by the mine will be relocated. We will try to avoid relocation of people and graves as far as possible		Social Impact Assessment
Mr Piet Nkosi  Leeuwfontein 431 JS	One on one	18 October 2017	Will there be employment opportunities available for local community members?	The Social Labour Plan of the mine does recommended the employment of local labour as far as possible.		Social Impact Assessment
Mr Thabo Madonsela  Leeuwfontein 431 JS	One on one	18 October 2017	I am used to the rural lifestyle and I do not want to live in a township. Mining companies often relocate people to the township.	This have been noted in the S/E study		Social Impact Assessment

Interested and Affected Parties		Date of comments received	Issues raised	EAPs response to issues as mandated by the applicant	Consultation Status (As disclosed in the EAP response.)	Category
Name of Individual	Consulted					
<b>Farm Workers</b>						
Mr Moses Nkosi Rietvalley 387 JS	One on one	18 October 2017	Should the proposed mine proceed on Mr Edward Deventer's farm, we will lose our jobs.	The change in employment of farm labours impacted by the mine has been noted in the S/E study.		Social Impact Assessment
Mr Moses Nkosi Rietvalley 387 JS	One on one	18 October 2017	It should be taken into consideration that Mr Johannes Sithole resides on the affected proposed mine area.	Comment Noted.		Social Impact Assessment
<b>Landowners or lawful occupiers on adjacent properties</b>						
Mr Ntandane Wintershoek 424 JS	One on one	18 October 2017	Will community members be relocated to make way for the proposed mining activities?	The socio economic study will identify communities impacted by mining operations. We will try to avoid relocation of people and graves as far as possible.		Social Impact Assessment
Mr Ntandane Wintershoek 424 JS	One on one	18 October 2017	How will underground mining activities affect us as adjacent landowners?	This will be assessed in the specialist studies and EIA.		Social Impact Assessment
Ms Thembu Nkosi Leeuwfontein 431 JS	Telephonic	18 October 2017	Will our farm Leeuwfontein 431 JS be affected by the proposed mining activities?	The farm Leeuwfontein is adjacent to the open cast pit (BE). Impacts experienced on Leeuwfontein will be dust, vibrations and noise.. These impacts will be managed according to the Environmental Management Plan.		Social Impact Assessment
<b>Municipality</b>						
Mr Mingas Ngomane Ward Councillor (Ward 1)	Focus group meeting	13 September 2017	Is there a need to relocate people?	The socio-economic study will identify areas directly affected by the mine and also identify residents that have to be relocated. We will try to avoid relocation of people and graves as far as possible.		Social Impact Assessment

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Name of Individual	Consulted					
Clr Thandiwe Scheffers eMakhzeni Local Municipality (Ward 8)	Public Meeting	11 October 2017	Implementation of SLP must be done properly. Local procurement opportunities for local businesses are also important	Agreed the SLP must be implemented properly with local opportunities for local business and people		Social Impact Assessment
Ms Mariaan Joubert Nkangala District Municipality Chief EHP	Public Meeting	11 October 2017	How many jobs are going to be lost on the farms (farm workers) compared to the jobs that the mine will provide? Where will the farm workers go?	The Socio-economic Assessment will look at this. There are only two areas where there will be open cast mining. We have our social specialists in the field to identify who lives on the farms, interviewing the farmworkers, who they are and how many live there. So, we will identify how many people will be affected, so should those areas be mined, what will happen to them etc.		Social Impact Assessment
Mr Sibusiso Seun Mthimunye eMakhzeni Local Municipality Ward councillor in Dullstroom	Public Meeting	11 October 2017	This EIA is still in the beginning stages, the DMR can still reject it. You need more information, we need to focus on the current project. There will be more meetings, this is the first meeting. We need to know all the socio-economic issues.  Umzimbithi needs to consult the community on the SLP. The municipality is the lead of the community. The IDP must speak to the SLP.	Mr Stephen Horak: Thank you for the comment, the comment is noted.  The municipality would have been consulted as part of the drafting of the SLP.		Social Impact Assessment
Department of Environmental Affairs						
Department of Mineral Resources						
Department of Health						
Organs of state (Responsible for infrastructure that may be affected: Roads Department, Eskom, Telkom, DWA etc.)						

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Name of Individual	Consulted					
<b>Department of Water and Sanitation</b>						
<b>Department of Agriculture, Forestry and Fisheries</b>						
<b>Mpumalanga Tourism and Parks Agency (MTPA)</b>						
<b>Transnet</b>						
<b>Interested and Affected Parties</b>						
Mr Jabulani Petros Nkosi Juggernaut Co-Op Ltd	Public Meeting	11 October 2017	Where is the Social and Labour Plan (SLP) for this project? You cannot get your mining right without the SLP. The community needs to be consulted regarding the SLP. The SLP needs to be part of the Social Economic specialist study which is part of the EIA. If you look at Regulation 48 & 49 of Act 2002 of the Environmental Act, it says you need to indicate specifically how you consulted with the community. How are you going to link our issues to the EIA? You need to add our issues into the Draft Scoping Report. The SLP needs to indicate how local communities will benefit for example, local people need to be employed and given business opportunities.	Mr Bradly Thornton: Thank you for your comments. This is the platform for being involved and is a formal consultation in terms of the Acts (NEMA and MPRDA). The SLP has been compiled and submitted with the Mining Right Application. We are in the Scoping Phase and your comments will be incorporated accordingly. Your input will filter into the Socio-economic study and EIA. The EMPr will include conditions, which will require the Project to employ people from eMakhzeni Local Municipality and by law that is what Umsimbithi are going to have to do.  Mr Stephen Horak: Just on the process, the comments of today will be captured into a comment and response report and that will be included with the final scoping report which is submitted to the Department of Mineral Affairs (DMR). We will put the final document back in to the public domain so that you can check that your comments were captured correctly.  Mr Johan Nieman: Thank you for your comments, they are very valuable. We have compiled the SLP, we can share a copy with you if you like and you are welcome to engage with us.		Social Impact Assessment
Mr Jabulani Petros Nkosi	Public Meeting	11 October 2017	Regulation 50 of 28 Act 2002, you must have an Environmental Management Programme (EMPr). In the EMPr you need to have covered the Socio-Economic issues. I need to understand where you	Mr Stephen Horak: Thank you for your comment, the comment is noted.		Social Impact Assessment

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Name of Individual	Consulted					
Juggernaut Co-Op Ltd			got the Social Economic issues from that were presented. We were not consulted regarding issues of employment, business, bursaries and learnerships. You must use local workforce.			
Mr Jabulani Petros Nkosi Juggernaut Co-Op Ltd	Public Meeting	11 October 2017	Regarding the Human Resource development budget, the local workforce must be used, let us follow the law.	Mr Stephen Horak: Thank you for your comment, the comment is noted.		Social Impact Assessment
Mr Jabulani Petros Nkosi Juggernaut Co-Op Ltd	Public Meeting	11 October 2017	We have expectations regarding employment, business opportunities and education.	Mr Johan Nieman: We are willing to share the SLP, these expectations have been included.		Social Impact Assessment
Mr Jan Makabula	Public Meeting	11 October 2017	We would like to know what business opportunities there are for the local community, we would like to know this upfront.	Mr Stephen Horak: Thank you for your comment, the comment is noted.		Social Impact Assessment
Mr Jan Makabula	Public Meeting	11 October 2017	We would like to know what skills are required for the available jobs and will there be training for the local community in advance, so that we can get the jobs and not people from other areas.	Mr Stephen Horak: Thank you for your comment, the comment is noted.  This information is included in the SLP. The SLP commits the mine to skilling local people to get jobs on the mine.		Social Impact Assessment
Ms Joani Visagie Zoekop Farmers Trust	Landowners Meeting	11 October 2017	We are the community next to the N4. When you start mining, will the Zoekop community be relocated? What will the impact be on their livelihoods?	Mr Bradly Thornton: There is no mining on Zoekop. Most of the project is underground mining near to Zoekop, and a small surface footprint. So, there will not be a lot of surface impacts near Zoekop. We do not foresee any major relocation requirements, if any. There might be negotiations with regards to use of land but not relocation.		Social Impact Assessment