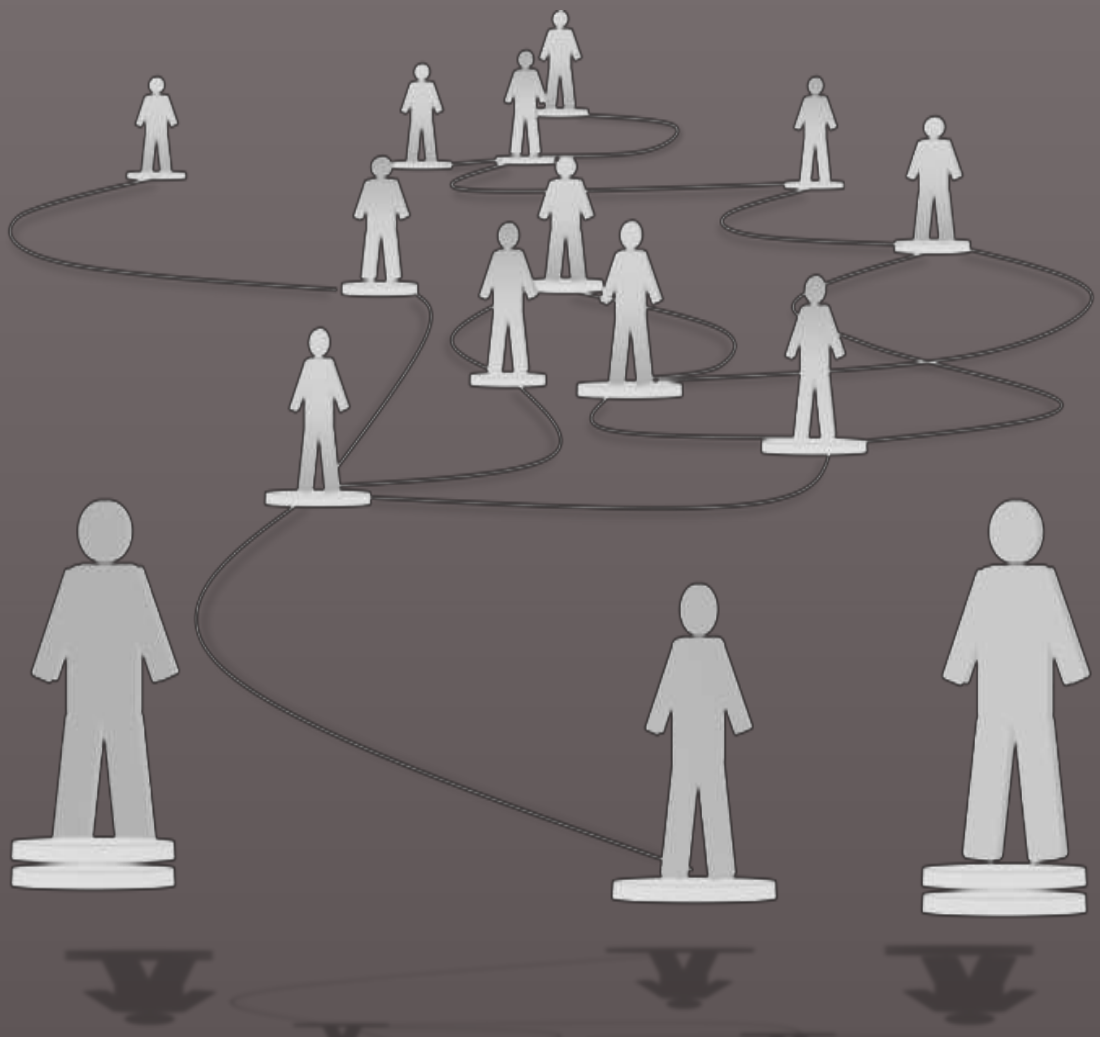

SUBIFLEX (PTY) LTD

The Duel Coal Project

SOCIAL IMPACT ASSESSMENT REPORT

July 2019

THE DUEL COAL PROJECT

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DECLARATION OF INDEPENDENCE

I, Lizinda Dickson, social scientist and social impact assessment specialists, hereby declare that I am employed by Diphororo Development, an independent environmental consultancy company. With more than 30 years of practice in the environmental and social consulting industry, Diphororo has extensive experience in identification, assessment and mitigation of social impacts caused by mining and other development.

Diphororo, as independent consultants, conducted the Social Impact Assessment in terms of the National Environmental Management Act and its Regulations for the Duel Coal Project. We hereby confirm that we have no business, financial, personal or other interest in the activity proceeding other than remuneration for work performed as defined under "independent" in the NEMA Environmental Impact Assessment Regulations, 2014.

_____ *4 July 2019*

Lizinda Dickson Date

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APPENDICES

Appendix A: Community Profile Questionnaire

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DEFINITIONS

TERM	DEFINITION
Affected household	A household that suffers assets losses as a result of the Duel Coal Project activities, and for which compensation, and resettlement entitlements where applicable, are due
Affected people	People that are defined as those whose livelihoods and standards of living are adversely affected by project activities - whether through the loss of assets or access to assets, through being deprived of resources, through loss of income sources or means of livelihood, through physical relocation, or through other losses that may be identified during the process of resettlement planning.
Affected settlement	A village that is completely or partially affected by the infrastructure or situated in a place regarded as dangerous in relation to the project.
Area of influence	The geographical area under which the mine has potential social, economic or environmental impacts (can be subdivided into direct and indirect).
Authorities	Include legislative and government administration representatives at the national, provincial and district/local level. In some locations (e.g. tribal areas) it may be appropriate to distinguish between modern and traditional forms of administration
Compensation	Payment in kind or in cash (cheque or another acceptable mechanism) for an asset or a resource that is acquired or affected by the project at the time the asset needs to be replaced
Community	Means a group of historically disadvantaged persons with interests or rights in a particular area of land on which the members have or exercise communal rights in terms of an agreement, custom or law. Provided that, whereas a consequence of the provisions of the Act negotiations or consultations with the community is required, the community shall include the members or part of the community, directly affected by prospecting activities, on land occupied by such members or part of the community. For the sake of this

TERM	DEFINITION
	project, the communities are referred to as Makushu, Mosholombe, and Pfumembe including the land claimants Nemamilwe.
Consultation	Means a twoway communication process between the applicant and the community or interested and affected party wherein the former is seeking, listening to, and considering the latter's response, which allows openness in the decision making process.
Employment	An activity in which a person performs, work for pay, profit or family gains. Such a person can be self-employed, an employer, an employee or a working family member (STATS SA)
Evaluation	Evaluation is a selective exercise that attempts to systematically and objectively assess progress towards and the achievement of an outcome. Evaluation is not a one-time event, but an exercise involving assessments of differing scope and depth carried out at several points in time in response to evolving needs for evaluative knowledge and learning during the effort to achieve an outcome. All evaluations—even project evaluations that assess relevance, performance and other criteria-need to be linked to outcomes as opposed to only implementation or immediate outputs. (United Nations Development Programme)
Host community and population	Community residing in or near the area to which affected people are to be relocated, and who may be affected by the resettlement programme.
Interested and affected Parties	Host Communities Landowners (Traditional and Title Deed owners) Traditional Authority Land Claimants Lawful land occupier The Department of Rural Development Any other person (including on adjacent and non-adjacent properties) whose socio-economic conditions may be directly affected by the proposed mining activities The Local Municipality The relevant Government Departments, agencies and institutions responsible for the various aspects of the environment and for infrastructure which may be affected by the proposed mining.

TERM	DEFINITION
Medicinal plants	Naturally growing plants that are used for medicinal purposes
Monitoring	Monitoring can be defined as a continuing function that aims primarily to provide the management and main stakeholders of an ongoing intervention with early indications of progress, or lack thereof, in the achievement of results. An ongoing intervention might be a project, programme or other kind of support to an outcome. (United Nations Development Programme)
Relocation	the physical removal of a household or business to a new site
Resettlement	The process of addressing the effects of physical and economic displacement, which incorporates compensation, relocation and livelihood restoration.
Tourism	The activities of persons travelling to and staying in places outside their usual environment for not more than one consecutive year for leisure, business and other purposes not related to the exercise of an activity remunerated from within the place visited (STATS SA)
Vulnerable household	A household that is headed by an orphan or a disabled person or an elderly, indigent person

1 INTRODUCTION

1.1 Introduction

Subiflex (Pty) Ltd holds a Prospecting Right on the farms Lotsieus 176 MT, Kranspoort 180 MT, Nairobi 181 MT and The Duel 186 MT and is proposing to develop an underground and opencast coal mine on the Remaining Extent of the Duel 186 MT (only).

Jacana Environmentals was commissioned by Subiflex to undertake an Environmental Impact Assessment for the proposed the Duel Coal Project. As part of the specialist studies it was identified that a Social Impact Assessment (SIA) was required. A Plan of Study for the Social Impact Assessment was submitted to the Department of Mineral Resources as part of the Scoping Report. The SIA has followed this approach to assess the significance of potential social impacts and has included recommendations to reduce negative impacts in order to enhance the benefits of the Project.

1.2 Social Impact Assessment

The National Environmental Management Act (NEMA) (Act 107 of 1998) sets out a number of principles which underpin environmental management in South Africa. A number of these principles relate to the social dimension of sustainable development and public process requirements such as transparency, accountability, democracy and environmental justice. The following principle outlines the basis for a Social Impact Assessment:

- Environmental management must place people and their needs at the forefront of its concern, and serve their physical, psychological, developmental, cultural and social interests equitably.

More specifically, the social, economic and environmental impacts of activities must be considered and assessed. In this context, social impacts have been defined by Vanclay (2002: 190) as:

Social impacts includes all social and cultural consequences to human populations of any public or private actions that alter the ways in which people live, work, play, relate to one another, organise to meet their needs, and generally cope as members of society.

2 DESCRIPTION OF THE PROJECT PARAMETERS

2.1 Project Locality

The proposed mine development is located 54 km north of Louis Trichardt in the Makhado Local Municipal area, Ward 21 in the Vhembe District.

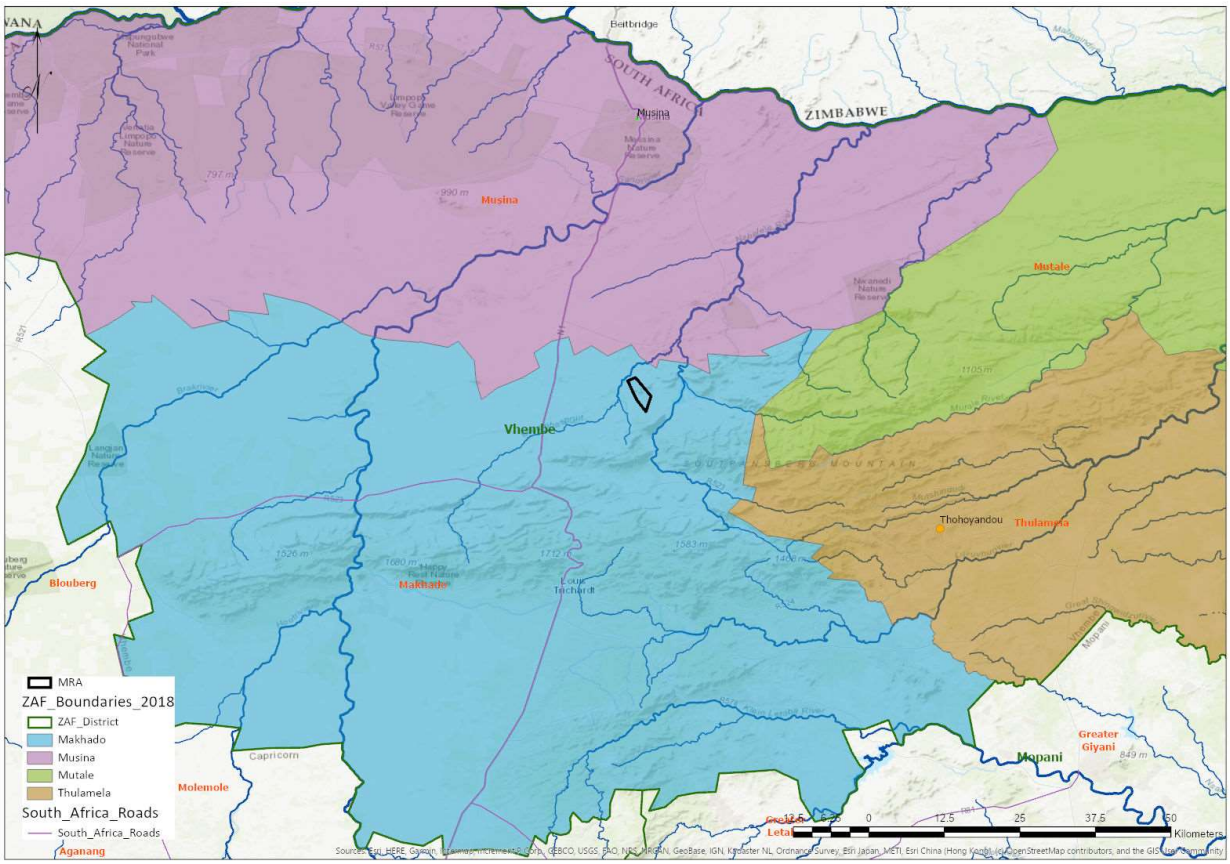

Figure 1: Locality Map

2.2 Project Extent and Description

The Duel Coal Project will be a combination of opencast and underground mining and has a potential Life-of-Mine (LOM) of 24 years. The envisaged mining method for the opencast area is a conventional drill and blast operation with truck and shovel, load and haul.

Underground mining operations will commence from year 10 onwards for a period of 5 years. Access will be from selected positions in the open pit, and the coal will be mined through the long-wall methodology. After underground activities have been completed, the access to the underground areas will be closed followed by the final rehabilitation of the open pit. The proposed infrastructure to be developed includes:

- Coal Handling Processing Plant

- Overburden Waste Dump
- Temporary Discard Dump
- Haul roads
- Pollution Control Dams
- Raw water storage facility and distribution systems
- Access road
- Auxiliary infrastructure including a workshop and store, office and change house, electrical power supply and security fencing.

The washed coal will be transported via road to a nearby siding. The final discard material from the plant will be disposed of in the mined-out open pit. In the event that the pit is unavailable due to existing mining activities, the discard material will be placed on an interim surface discard dump, from where it will be reclaimed and dumped into the mined-out open pit towards the end of the mine life as part of the rehabilitation of the mining site.

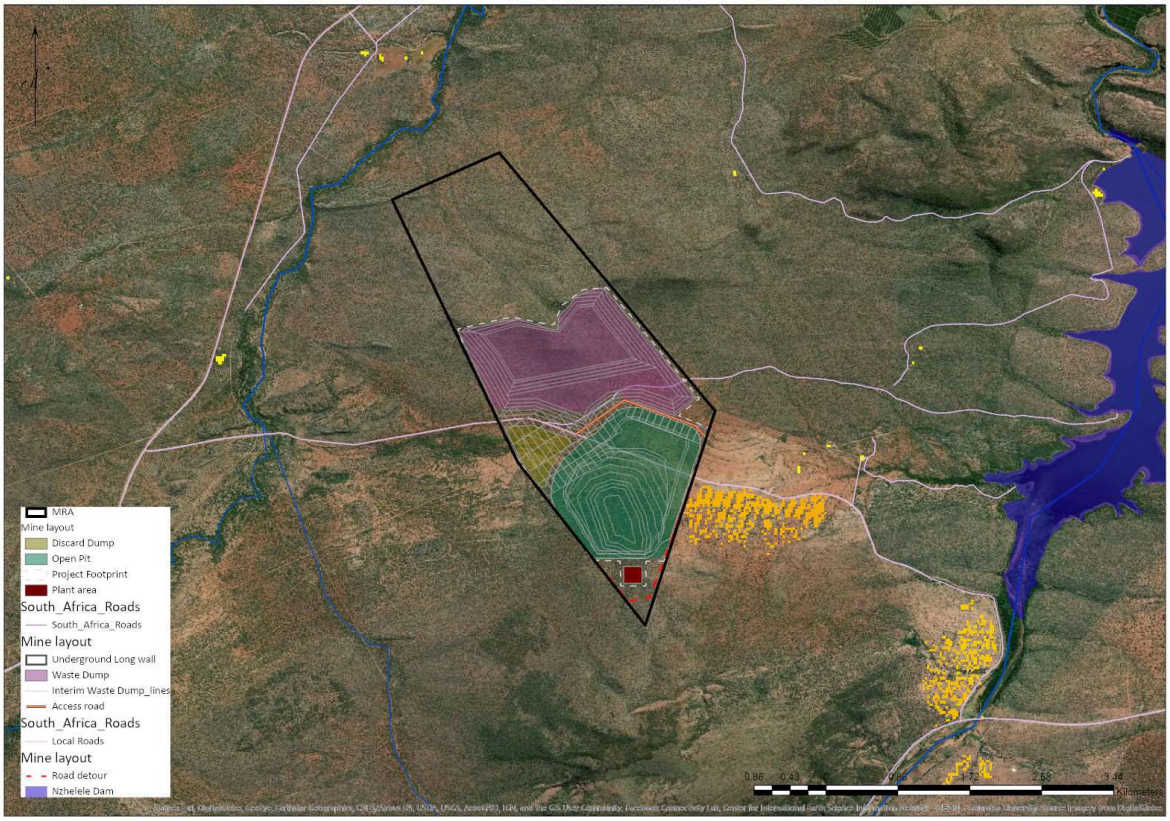

Figure 2: Project Extent

2.3 Institutional Locality

The project is located within the Makhado Local Municipal area, within the Vhembe District's jurisdiction. The project area falls within Ward 21 but is bordered by Ward 37. Ward 37 contains the nearest settlements and is therefore included in the socio-economic assessment.

The figure below indicates the boundaries of the Municipality and relevant Wards.

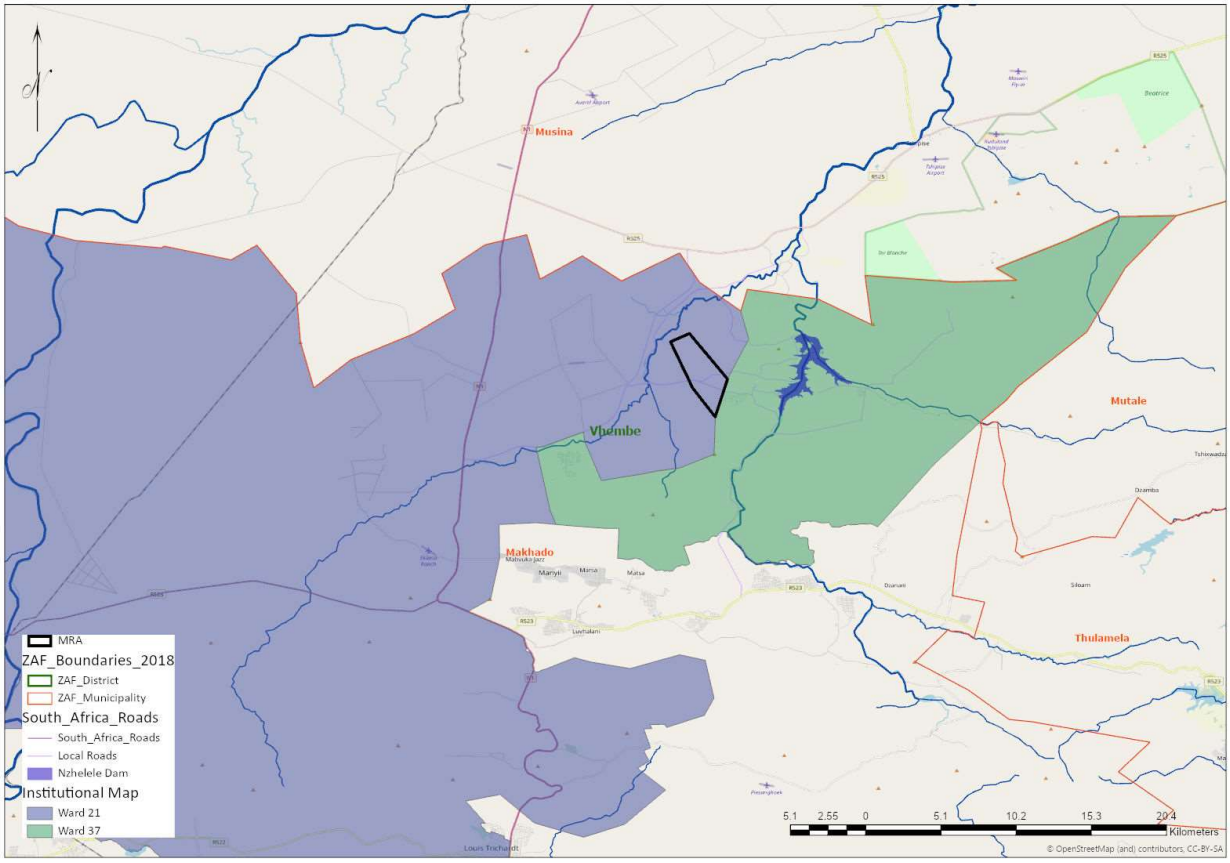

Figure 3: Project in relation to the Makhado Local Municipal area and Ward 21 and 37

3 METHODOLOGY

3.1 Introduction

The SIA was undertaken in line with the Scoping and EIA process outlined in NEMA and therefore comprised two reporting phases. These are set out in Section below.

3.2 Scope of Study

3.2.1 Scoping Phase

The scoping phase was largely desk-based drawing on a variety of policies, plans, statistics, reports, case studies, and guidelines. The process involved the compilation of the socio-economic baseline; identification of potential issues and impacts; as well as setting out of the plan of study, or the methodology for the impact assessment phase. The aim of this phase was to generate an understanding of the socio-economic context and potential receptor communities in the study area, and to propose an approach to address the identified issues.

3.2.2 Impact Assessment Phase

The SIA phase involved further desk-based research through an international literature review as well as primary research based on interviews with key stakeholders. Data collection is detailed in Section 2.3 below.

The spatial scope was considered and this included a definition of the potential area of influence which was linked to the context of the issues and impacts. For the purpose of describing the socio-economic profile, the Makhado Local Municipality, and Ward 21 and 37 where data is available, were used as the geographical units.

In terms of temporal scope, the duration of construction and the operational design life of the proposed Project were considered. Impacts during each project stage were assessed, namely construction, operation and decommissioning phases.

The methodology in Section 2.5 applied the environmental impact assessment criteria to establish the significance of environmental impacts. Drawing on the data collected, both primary and secondary, professional judgement was applied to undertake the social assessment.

3.3 Data Collection

To collect data in support of the impact assessment, the following activities have been undertaken:

3.3.1 Review of Socio-economic and Planning Documents and Data

In order to document the socio-economic context of the study area within the Makhado Local Municipality and the Vhembe District Municipality, a number of important documents or sources of information were reviewed and referenced and used to inform this SIA:

- The National Development Plan
- Provincial Growth and Development Plans
- Stats SA:
  - Census 2011 data
  - Community survey 2007
  - Quarterly Labour Force Survey 2012 & 2013
  - General household survey, 2011
  - Income and Expenditure survey 2010/2011
- Municipal IDPs and SDFs.
  - Makhado Local Municipality IDP, 2018– 2019
  - Makhado Local Municipality LED Strategy, 2013
  - Makhado Local Municipality SDF, 2012/2013 – 2016/2017
- Department of Environment:
  - SANBI database on municipal environmental information
- Department of Water and Sanitation
  - Blue Drop and Green Drop status where available
  - Water and sanitation services (Access levels, backlogs, projects underway, plans for the future by all spheres of government, and water catchment areas etc)
- Transport
  - Roads and all transport Infrastructure (e.g. Airports, harbours etc.)
- Department of Basic Education and Dept of Higher Education:
  - Schools
  - Education districts
- Department of Rural Development and Land Reform and Department of Traditional Affairs:
  - Land claims
  - Traditional communities

- Other Social Impact Assessment (SIA) for similar projects
- Maps and available orthophotos and satellite imagery of the proposed project sites and surrounding environment

3.3.2 Literature Review

A literature review has been undertaken and focuses on best practice derived from case studies and was sourced from academic journals and studies available on the internet or the media. See references for a list.

Additional documents such as planning documents which substantiate the baseline profile or provide context to the Project have been referred to where relevant. This provided a conceptual framework for designing the empirical data collection and interpretation.

3.3.3 Public Participation Process

The Public Participation Process (PPP) undertaken as part of the EIA included various activities such as community meetings, public meetings and written submissions received from interested and affected parties. These played an essential part in the EIA process. The communications during the PPP and written submission of comments have been reviewed. Issues raised through this process have been incorporated into the SIA where relevant. Where possible, the PPP and SIA processes have been integrated.

3.3.4 Reference to other Specialist Studies

The other technical specialist studies undertaken for the Scoping and EIA of the Due Coal Project have fed into the SIA where there have been cross-cutting issues. These are predominantly the air quality, noise, visual and health studies.

3.3.5 Field Research and Interviews

Field Research was undertaken for the SIA to collect information from community members and representatives. These surveys formed the basis of the primary data collection and assisted with the gathering of baseline information as well as establishing the stakeholder's perceptions, and interests and concerns. The following activities took place:

- Community Profile surveys
- Household survey – Perceptions, Impacts and Assets

3.3.6 Site Visits and Observation

Site visits were undertaken in July, August, September and October 2015 as part of the EIA (including a visit to Louis Trichardt). Observations were also made whilst on site or within the wider study area, and these have supplemented the other findings.

3.4 Description of Issues and Identification of Impacts

The data collected from the range of stakeholders has been documented as 'social facts' which reflect the critical issues and concerns as raised by stakeholders. The issues have been described and interpreted through the application of a qualitative methodology. The following methods have been used interchangeably to predict impacts:

- Comparative approach: This method examines how an affected community has responded to change in the past, or the impact on other communities that have undergone a similar action. The present is compared to the future with the proposed action. Based on past research and experiences in similar cases, the determination of significance is made based on the comparative data presented.
- Straight-line trend projection: This method takes an existing trend and simply projecting the same rate of change into the future; we assume that what happened in the past is likely to happen in the future.
- Population multiplier methods: In this method, each specified increase in population implies designated multiples of other variables, such as jobs, housing units and other infrastructure needs.
- Statistical significance means: It involves calculations to determine probabilistic differences between with and without the proposed action. A social assessor could employ comparative statistical methods to determine statistical significance for appropriate SIA variables.
- Scenarios: These refer to logical-imaginations based on construction of hypothetical futures through a process of mentally modelling the assumptions about the SIA variables in question and fitted empirical-similar past cases used to analyse the present case with experts adjusting the scenario by taking into account the unique characteristics of the present case. Scenarios include exercises to

develop the likely, alternative or preferred future of a community or society. Scenarios can be used to compare different outcomes (e.g., best versus worst case).

- Social Mapping; utilising existing baseline characteristics overlaid by project plans
- Calculation of 'futures forgone': several methods have been formulated to determine what options would be given up irrevocably as a result of a project, for instance, river recreation and agricultural land use after the building of a dam. The wetlands mitigation strategy is such an example. (Burdge 1994).

3.5 Study Zone Delineation

The social impact assessment was conducted based on the evaluation of potential impacts in various study zones. These have been determined at this stage based on buffer zones surrounding mine infrastructure. If it is determined by any of the specialist studies that an impact is likely outside this determined study zones, these areas would need to be included at that stage. It is however envisaged that with a conservative approach this in unlikely to be required. Utilising satellite imagery and aerial photography, community structures, facilities and services were identified to be surveyed in more detail.

The study area has been divided into the following study zones:

- Study Zone 1 – The surface mine footprint
- Study Zone 2 – A buffer of 500m surrounding the surface mine footprint
- Study Zone 3 – A buffer of 1 000m surrounding the surface mine footprint
- Study Zone 4 – A buffer of 2 000m surrounding the surface mine footprint
- Study Zone 5 – Makhado Local Municipal area

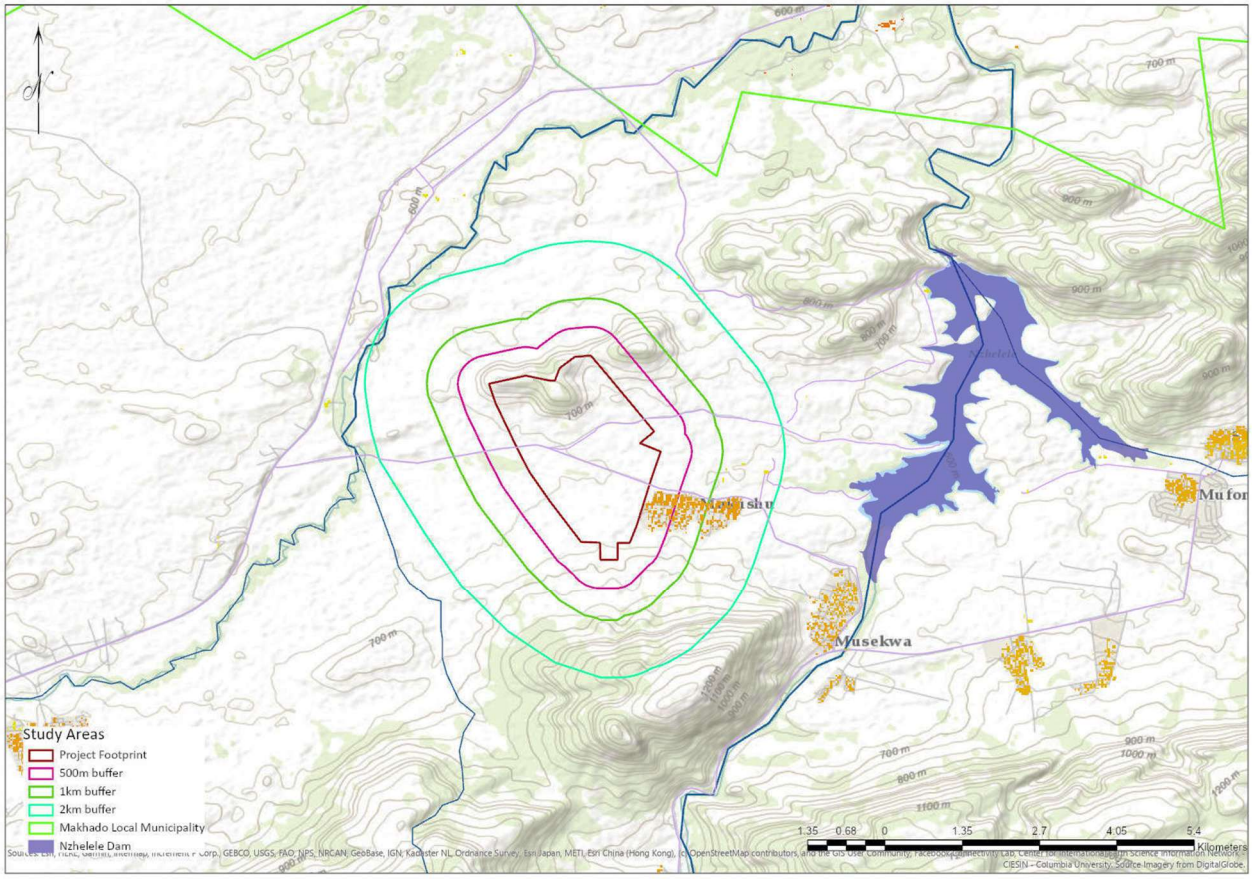

Figure 4: Study areas

3.6 Sensitive Receptors

The following sensitive receptors have been included in the Social Impact Assessment:

- Residential areas (houses)
- Small businesses
- Schools
- Clinics
- Households Associated Graves
- Communal Graveyards
- Conservation areas

The figure below indicates the sensitive receptors.

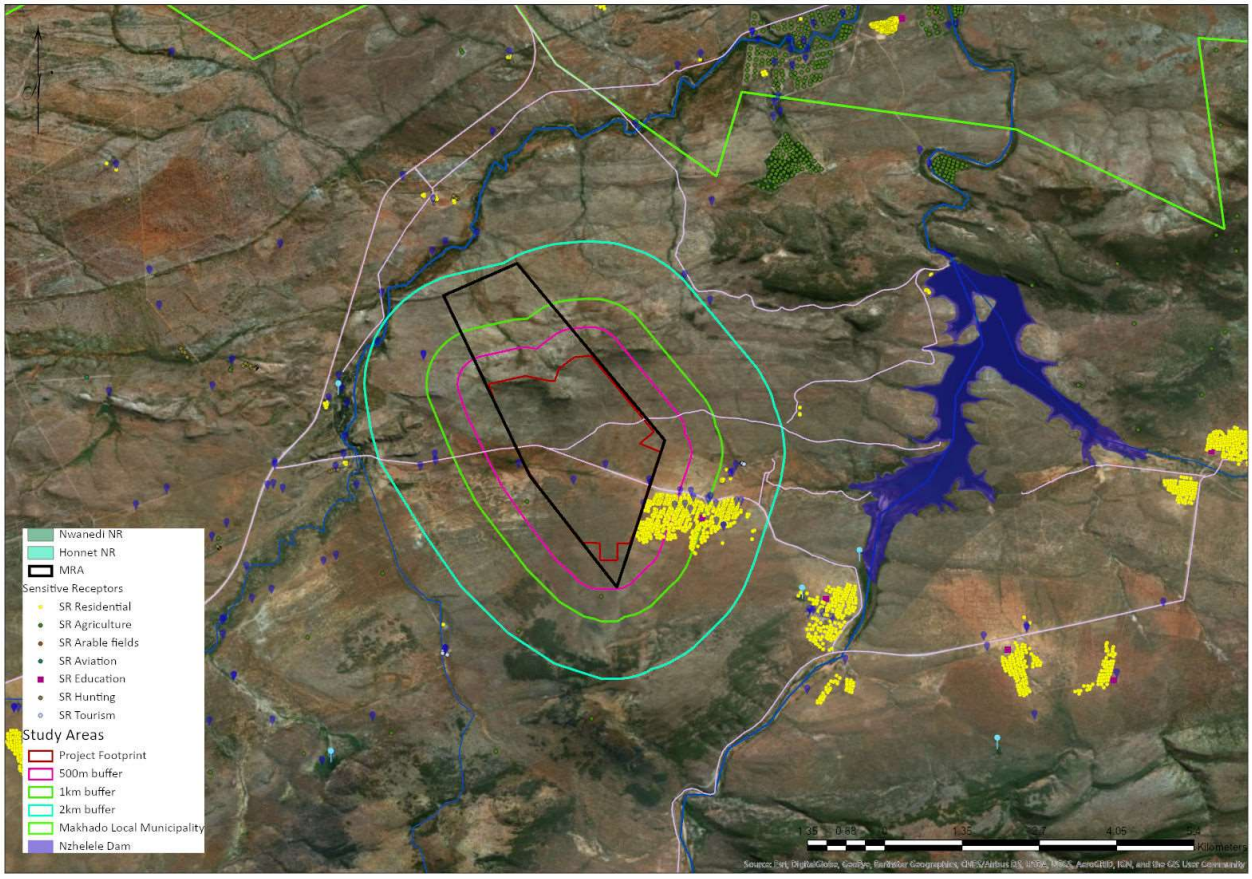

Figure 5: Sensitive Receptors

3.7 Sensitivity Assessment (Interaction between Environmental and Socio-economic Impacts)

The specialist impact assessments that have a potential direct impact on the health and well-being and livelihoods of the sensitive receptors in the area were considered during the social sensitivity mapping exercise, namely the air quality, ambient noise, blasting, and groundwater impact assessments.

The criteria used for the sensitivity mapping were determined in conjunction with the various specialists and are based on the following:

- Legal requirements and applicable standards and guidelines;
- Impact modeling results as presented in the specialist reports;
- Recommendations made by the specialists in respect of mitigation; and
- Experience of the specialists involved.

In respect of air quality and noise, the worst case was assumed, i.e. without the implementation of any mitigation measures. For blasting, it was expected that the revised blasting charge recommended in the specialist report would be implemented and refined as monitoring data becomes available.

3.8 Assessing the Weight of Social Impacts

3.8.1 Assessment Criteria

According to the NEMA Regulations, 'significant impact means an impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment'. In line with the Regulations, and based on the qualitative findings of the activities undertaken, each potentially significant impact has been assessed with regard to:

- the nature and status of the impact
- the extent and duration of the impact
- the probability of the impact occurring
- the effect of significance on decision-makings
- the weight of significance
- the mitigation efficiency

3.8.2 Nature and Status

The 'nature' of the impact describes what is being affected and how. The 'status' is based on whether the impact is positive, negative or neutral.

3.8.3 Spatial Extent

'Spatial Extent' defines the spatial or geographical scale of the impact.

Table 1: Rating of Extent

Category	Rate	Descriptor
Site	1	Site of the proposed development
Local	2	Limited to site and/or immediate surrounds (500m zone of influence)
District	3	Makahdo Municipal area
Region	4	Vhembe District, and direct neighbouring district
Provincial	5	Limpopo Province
National	6	South Africa
International	7	Beyond South African borders

3.8.4 Duration

'Duration' gives the temporal scale of the impact.

Table 2: Rate of Duration

Category	Rate	Descriptor
Temporary	1	0 – 1 years
Short term	2	1 – 5 years

Medium term	3	5 – 15 years
Long term	4	Where the impact will cease after the operational life of the activity either because of natural process or by human intervention.
Permanent	5	Where mitigation either by natural processes or by human intervention will not occur in such a way or in such a time span that the impact can be considered as transient.

3.8.5 Probability

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

Table 3: Rate of Probability

Category	Rate	Descriptor
Rare	1	Where the impact may occur in exceptional circumstances only
Improbable	2	Where the possibility of the impact materialising is very low either because of design or historic experience.
Probable	3	Where there is a distinct possibility that the impact will occur
Highly probable	4	Where it is most likely that the impact will occur
Definite	5	Where the impact will occur regardless of any prevention measures

3.8.6 Intensity

'Intensity' defines whether the impact is destructive or benign, in other words the level of impact on the environment.

Table 4: Rate of Intensity

Category	Rate	Descriptor
Insignificant	1	Where the impact affects the environment is such a way that natural, cultural and social functions and processes are not affected. Localised impact and a small percentage of the population is affected
Low	2	Where the impact affects the environment is such a way that natural, cultural and social functions and processes are affected to a limited extent
Medium	3	Where the affected environment is altered in terms of natural, cultural and social functions and processes continue albeit in a modified way
High	4	Where natural, cultural or social functions or processes are altered to the extent that they will temporarily or permanently cease.
Very High	5	Where natural, cultural or social functions or processes are altered to the extent that they will permanently cease and it is not possible to mitigate or remedy the impact.

3.8.7 Ranking, Weighting and Scaling

The weight of significance define the level or limit at which point an impact changes from low to medium significance, or medium to high significance. The purpose of assigning such weights serves to highlight those aspects that are considered the most critical to the various stakeholders and ensure that the element of bias is taken into account. These weights are often determined by current societal values or alternatively by scientific evidence (norms, etc.) that define what would be acceptable or unacceptable to society and may

be expressed in the form of legislated standards, guidelines or objectives. In the case of social impacts, the establishment of weights of significance are guided by:

- The basic rights afforded to people in terms of South Africa's Constitution as set out in the Bill of Rights;
- The core values and principles that underpin SIA;
- The need to address the historic inequalities in South Africa;
- The need to create opportunities for the historically disadvantaged communities in South Africa; and,
- The significance attached to issues by the affected communities.

The weighting factor provides a means whereby the impact assessor can successfully deal with the complexities that exist between the different impacts and associated aspect criteria.

Table 5: Description of assessment parameters with its respective weighting

SPATIAL EXTENT	DURATION	INTENSITY / SEVERITY	PROBABILITY	WEIGHTING FACTOR	SIGNIFICANCE RATING (SR - WOM) PRE-MITIGATION	MITIGATION EFFICIENCY (ME)	SIGNIFICANCE RATING (SR-WM) POST MITIGATION
Site (1)	Short term (1)	Insignificant (1)	Rare (1)	Low (1)	Low (0 – 19)	High (0.2)	Low (0 – 19)
Local (2)	Short to Medium term (2)	Minor (2)	Unlikely (2)	Low to Medium (2)	Low to Medium (20 – 39)	Medium to High (0.4)	Low to Medium (20 – 39)
District (3)							
Regional (4)	Medium term (3)	Medium (3)	Possible (3)	Medium (3)	Medium (40 – 59)	Medium (0.6)	Medium (40 – 59)
Provincial (5)	Long term (4)	High (4)	Likely (4)	Medium to High (4)	Medium to High (60 – 79)	Low to Medium (0.8)	Medium to High (60 – 79)
National (6)							
International (7)	Permanent (5)	Very high (5)	Almost certain (5)	High (5)	High (80 – 110)	Low (1.0)	High (80 – 110)

3.8.8 Identifying the Potential Impacts without Mitigation (WOM)

Following the assignment of the necessary weights to the respective aspects, criteria are summed and multiplied by their assigned weightings, resulting in a value for each impact (prior to the implementation of mitigation measures).

Equation 1:

Significance Rating (WOM) = (Extent + Intensity + Duration + Probability) x Weighting Factor

3.8.9 Effect of Significance on Decision-makings

Significance is determined through a synthesis of impact characteristics as described in the above paragraphs. It provides an indication of the importance of the impact in terms of both tangible and intangible

characteristics. The significance of the impact "without mitigation" is the prime determinant of the nature and degree of mitigation required. Table 3 below will determine whether the significance rating will have an effect on decision making or not.

Table 6: Effect of Significance of Decision-Making

Rating		Descriptor
Negligible	0	The impact is non-existence or insignificant, is of no or little importance to decision making.
Low	1-19	The impact is limited in extent, even if the intensity is major; the probability of occurrence is low and the impact will not have a significant influence on decision making and is unlikely to require management intervention bearing significant costs.
Low to Medium	20 – 39	The impact is of importance, however, through the implementation of the correct mitigation measures such potential impacts can be reduced to acceptable levels. The impact and proposed mitigation measures can be considered in the decision-making process
Medium	40 – 59	The impact is significant to one or more affected stakeholder, and its intensity will be medium or high; but can be avoided or mitigated and therefore reduced to acceptable levels. The impact and mitigation proposed should have an influence on the decision.
Medium to High	60 -79	The impact is of major importance but through the implementation of the correct mitigation measures, the negative impacts will be reduced to acceptable levels.
High	80–110	The impact could render development options controversial or the entire project unacceptable if it cannot be reduced to acceptable levels; and/or the cost of management intervention will be a significant factor and must influence decision-making.

3.8.10 Mitigation

The impacts that are generated by the development can be minimised if measures are put in place to reduce them. These measures are mitigation measures to ensure that the development takes into consideration the environment and the impacts that are predicted so that development can co-exist with the environment as a basis for planning. The following hierarchy of mitigation is considered:

- Avoid
- Reduce / Mitigate
- Manage / Restore
- Remedy / Compensate

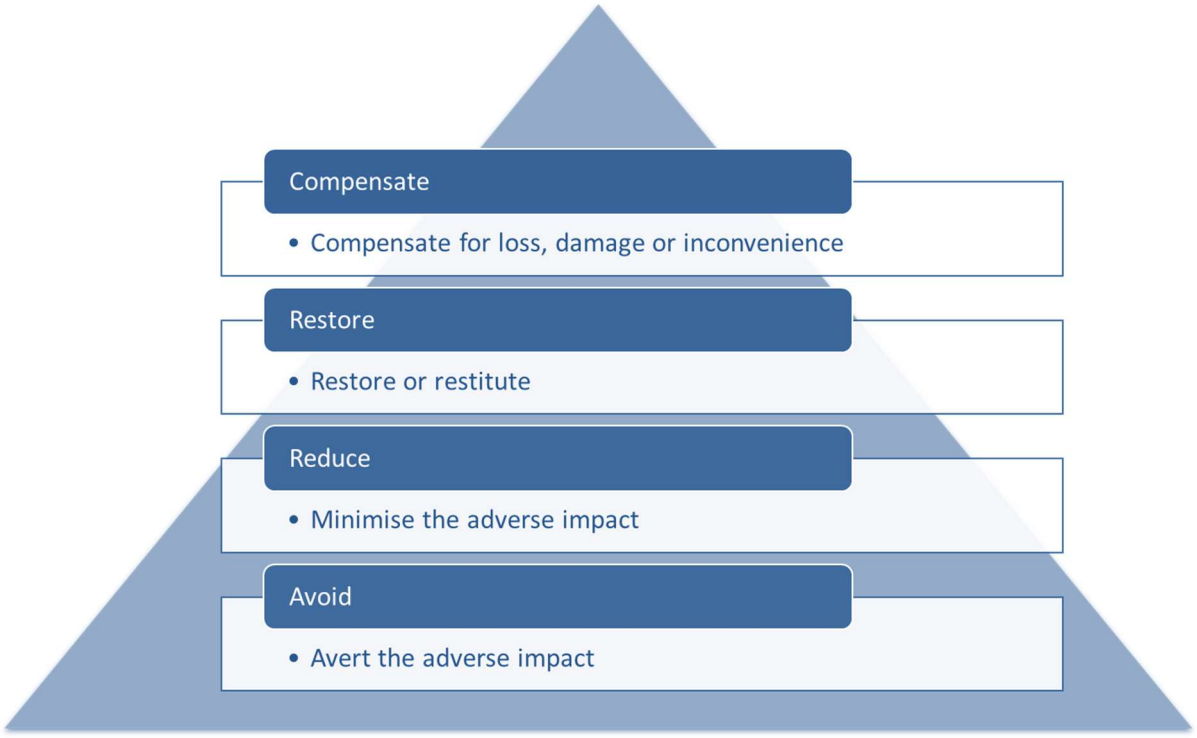

Figure 6: Mitigation Hierarchy

3.8.11 Identifying the Potential Impacts with Measures (WM)

In order to gain a comprehensive understanding of the overall significance of the impact, after implementation of the mitigation measures, it was necessary to re-evaluate the impact.

3.8.12 Mitigation Efficiency (ME)

The most effective means of deriving a quantitative value of mitigated impacts is to assign each significance rating value (WOM) a mitigation effectiveness (ME) rating. The allocation of such a rating is a measure of the efficiency and effectiveness, as identified through professional experience and empirical evidence of how effectively the proposed mitigation measures will manage the impact. Thus, the lower the assigned value the greater the effectiveness of the proposed mitigation measures and subsequently, the lower the impacts with mitigation.

Equation 2:

Significance Rating (WM) = Significance Rating (WOM) x Mitigation Efficiency (ME) Mitigation Efficiency is rated out of 1 as follows:

Table 7: Mitigation Efficiency

Category	Rate	Descriptor
Low	1	Mitigation cannot make a difference to the impact
Low to Medium	0.8	Mitigation will minimize impact slightly

Medium	0.6	Mitigation will minimize impact to such an extent that it becomes within acceptable standards
Medium to High	0.4	Mitigation will minimize impact to such an extent that it is below acceptable standards
High	0.2	Mitigation will minimize impact to such an extent that it becomes insignificant

3.8.13 Significance Following Mitigation (SFM)

The significance of the impact after the mitigation measures are taken into consideration. The efficiency of the mitigation measure determines the significance of the impact. The level of impact is therefore seen in its entirety with all considerations taken into account.

3.9 Cumulative Impact

The EIA Regulations provides the following definition:

'"cumulative impact", in relation to an activity, means the impact of an activity that in itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area'.

There is the potential for cumulative impact as the coal mining potential of the area is exploited, depended on further sites being identified and developed, particularly if favourable market conditions are present.

Cumulative effects can be:

- Additive: the simple sum of all the effects (e.g. the accumulation of ground water pollution from various developments over time leading to a decrease in the economic potential of the resource);
- Synergistic: effects interact to produce a total effect greater than the sum of individual effects.
- These effects often happen as habitats or resources approach capacity (e.g. the accumulation of water, air and land degradation over time leading to a decrease in the economic potential of an area);
- Time crowding: frequent, repetitive impacts on a particular resource at the same time (e.g. multiple boreholes decreasing the value of water resources);
- Neutralizing: where effects may counteract each other to reduce the overall effect (e.g. infilling of a wetland for road construction, and creation of new wetlands for water treatment); and,
- Space crowding: high spatial density of impacts on an ecosystem (e.g. rapid informal settlement).

Source: Adapted from Cooper, 2004.

3.10 Limitations and Assumptions

Sources of uncertainty and risk commonly associated with projects are linked to:

- This study was carried out with the information available to the specialists at the time of executing the study, within the available timeframe and budget. The sources consulted are not exhaustive and additional information which might strengthen arguments or contradict information in this report might exist.
- The specialists did endeavor to take an evidence-based approach in the compilation of this report and did not intentionally exclude scientific information relevant to the assessment.
- It is assumed that a business case has been produced by the Applicant which has assessed the need for the Project as well as the financial sustainability. This SIA has therefore not evaluated these aspects of the Project.
- Areas that might yield socio-economic sensitivities have been identified through a desktop study utilising available Mapping, Orthophotos and Google Earth™. The areas that have been marked are the sensitive areas visible to the socioeconomic specialists at the time of the study, which are in close proximity to the proposed project location under investigation
- The 2011 Census is the most current source of official statistics and this has been used for generating a baseline profile of the study area. It should be noted that this data may now be out of date to some degree and may no longer accurately reflect the current socio-economic profile.
- A household survey supplemented the Census data and was completed for the Makushu community only (which is the closest to the mine development area) to a 60% sample of the community.
- Assessment of the impact on sense of place is based on the specialist's opinion as sense of place is a very personal experience, and is not easily measurable.

4 DESCRIPTION OF THE SOCIAL ENVIRONMENT

The Socio-economic baseline is provided for the Municipal area (regional perspective), and the Ward analysis for the Local / Project area.

4.1 Regional and Local Environment

4.1.1 Sensitive Receptors

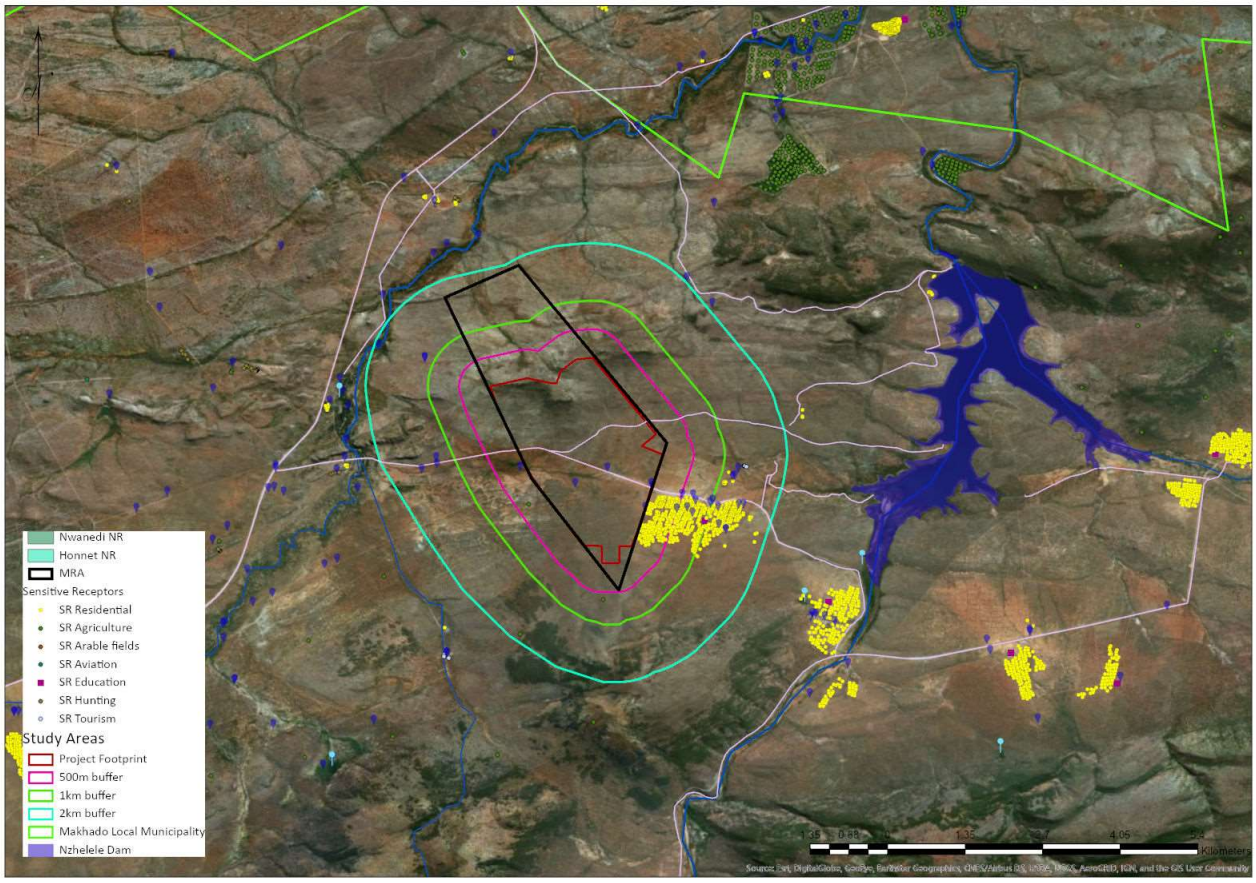

Figure 7: Sensitive Receptors

The sensitive receptors identified within a 2km radius around the Mining area include:

- Community housing
- Subsistence arable (rainfed) land
- Grazing for livestock and game
- Nature Conservation
- Game Farming

The sensitive receptors in the regional environment (further than 2km from the mine area) include:

- Commercial Arable / Irrigated land (closest 4km)
- Hunting Camps and Facilities (closest 3km)
- Grazing for livestock and game
- Community housing (further than 2km)

4.1.2 Settlements

4.1.2.1 Urban Settlements

The nearest formal urban settlement is the Makhado and Thohoyandou towns.

Table 8: Towns in the region and their direct distance from the planned project

Town	Direction	Distance
Mopane	North-West	21 km
Tshipise	North-East	20 km
Makhado	South-west	35 km
Musina	North	40 km
Thohoyandou	South-east	49 km

The figure below indicates the nearest towns:

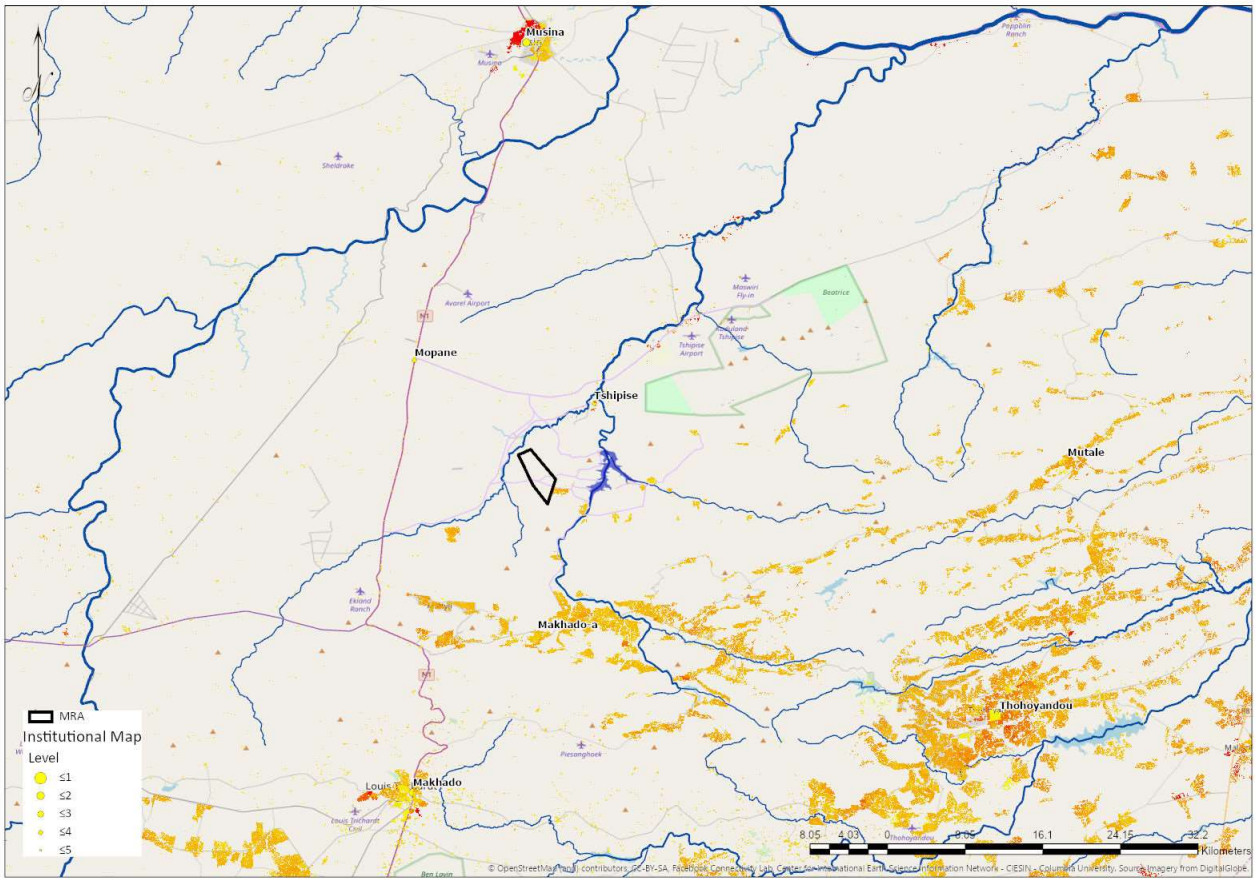

Figure 8: Towns in the region

4.1.2.2 Rural Settlements

There are rural settlements in the surrounding environment of the planned Duel Project.

*Table 9: **Settlements and their direct distance from the planned project***

Settlement	Direction	Distance
Makushu	South-east	50 m
Mosholombe	South-east	950 m
Pfumembe	South-East	3 km
Musekwa (Ngundu)	South-east	6 km
Maranikhwe	East	8 km
Mudimeli/Fripp	West	8.5 km
Maangaani	South	9 km

The figure on the next page indicate their locations.

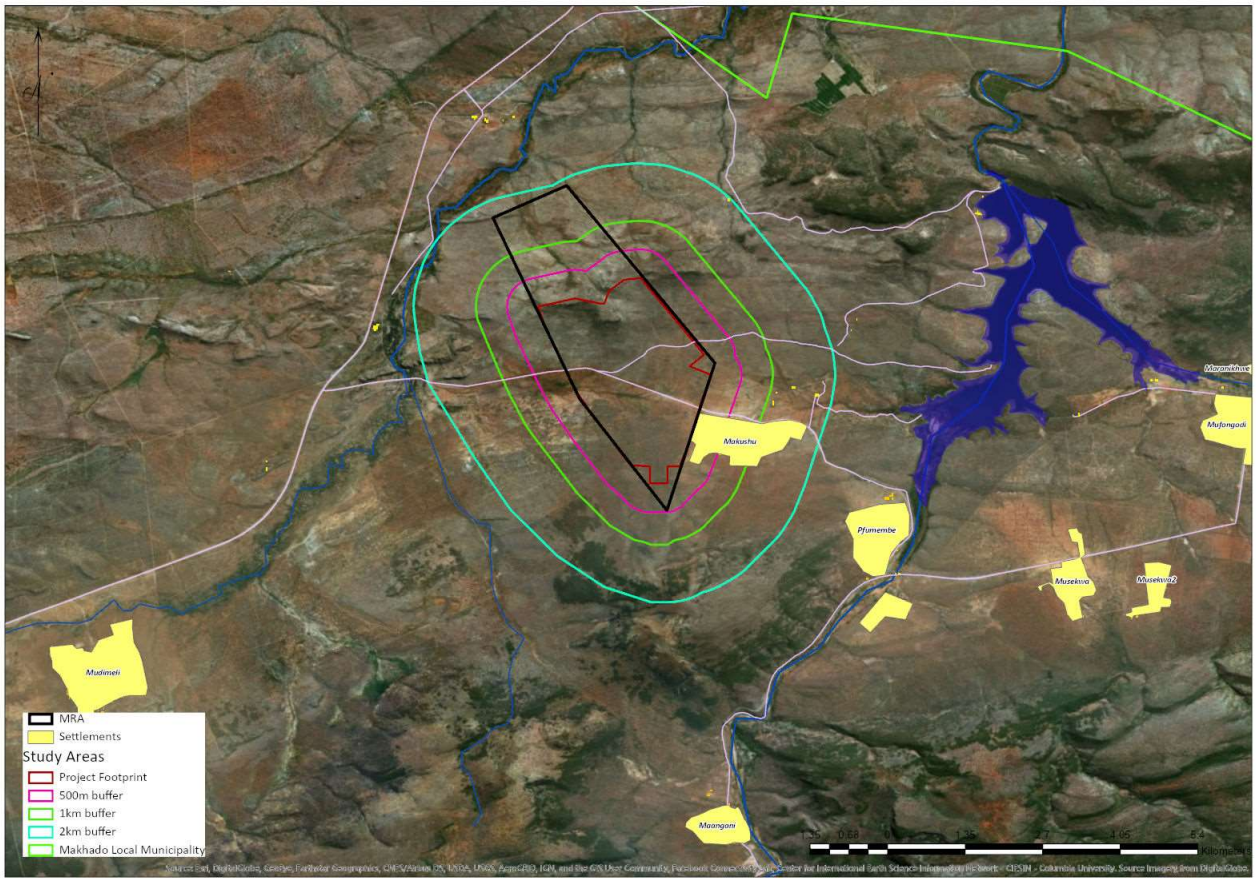

Figure 9: Settlements neighbouring and surrounding the Mining Right Application area

The closest communities are the Makushu and Mosholombe communities and approximately 3km away the Pfumembe Community. Further details studies are planned for these settlements.

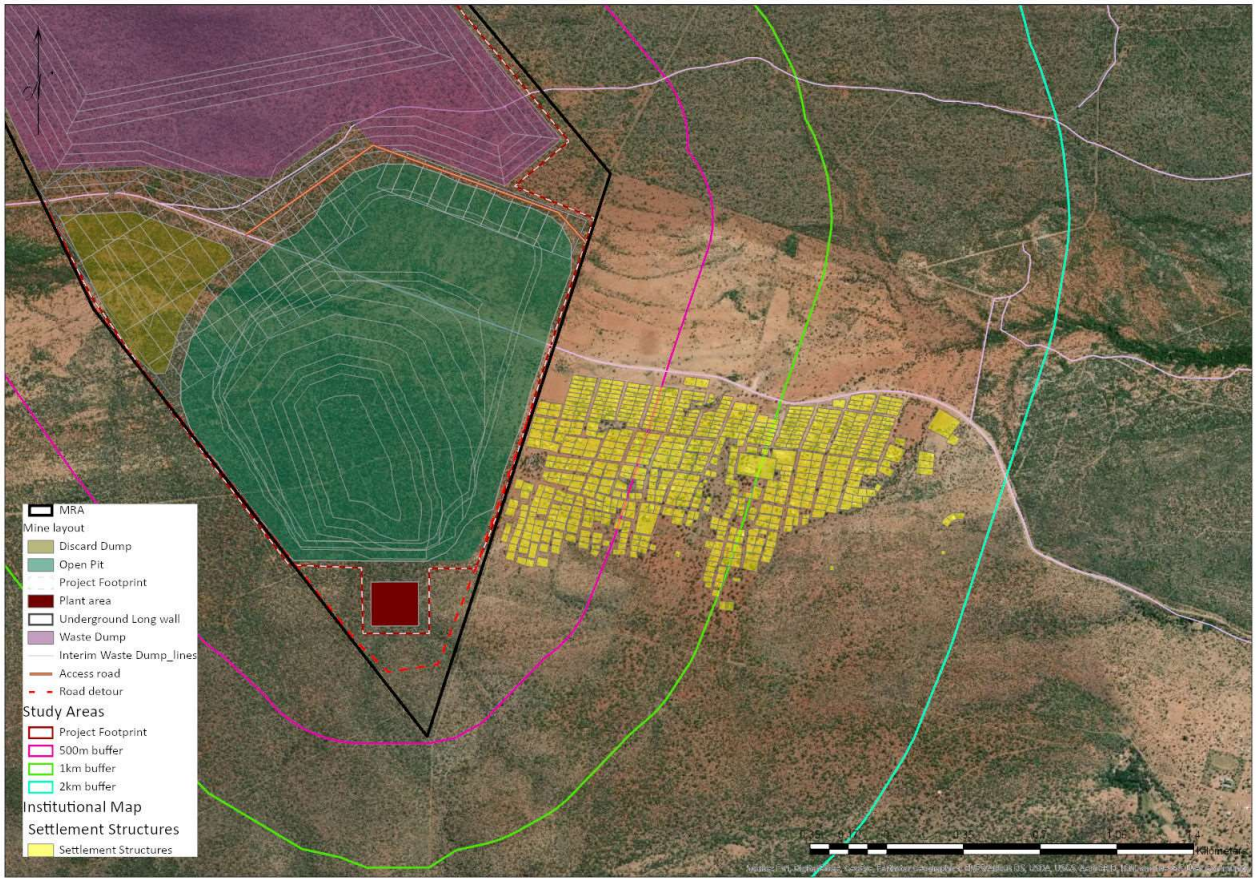

Figure 10: Makushu & Mosholombe Settlements

4.1.3 Neighbouring Properties

The following properties neighbouring the Duel Project:

Table 10: Neighbouring Properties

Property Name	Direction	Landowner	Land Use
The Duel 186 MT Portion 1	North-east	Josias Nndwambi	Livestock grazing
Gray 189 MT	East	Republic of South Africa T337/1950VN	Communal Grazing Nature Reserve
Telema 190 MT	South-east	Republic of South Africa T337/1950VN	Communal Grazing Rural Settlement
Kondoa 191 MT	South	Republic of South Africa T337/1950VN	Communal Grazing
Salaita 188 MT	South-west	Akkerland Boerderye T79230/1998	Game farming and hunting
Martha 185 MT Portion 1	West	Fumaria Holdings	Game grazing
Martha 185 MT Remaining Extent	North-west	Fumaria Holdings	Game grazing
Nakab 184 MT	North	Clint Howes Family Trust	Game farming & Private hunting

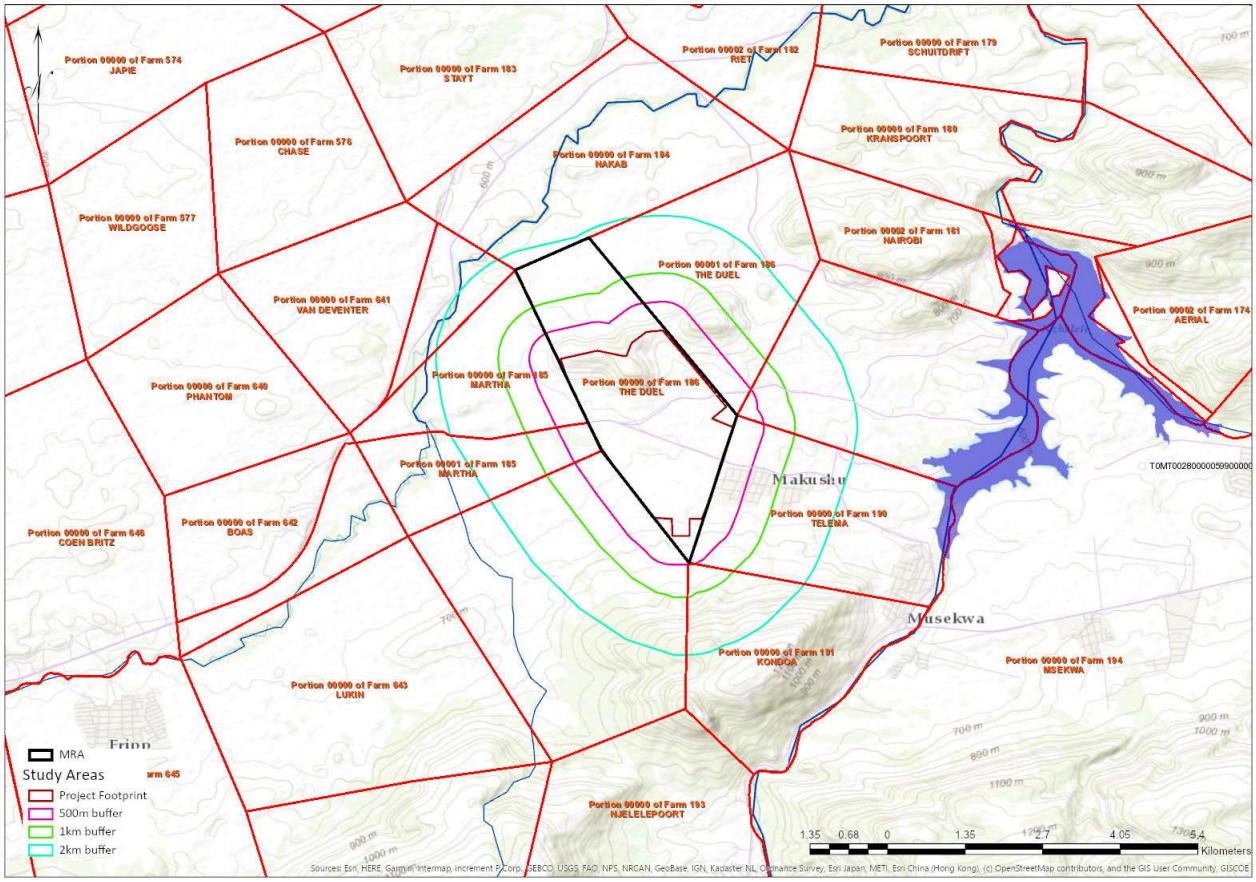

Figure 11: Neighbouring Properties

4.1.4 Demography and Population Structure

Makhado Local Municipality is one of the most populous municipalities in Limpopo Province. Females are more than males, which is normal for the Province and for the country. Ward 21 is where the proposed The Duel Coal Project will be located. This ward is also considerably larger than the project footprint, but a more detailed level of analysis of the 2011 Census is not possible yet. Ward 21 has a population of slightly more than 21,000 people, who all live on farms. It is significant that there a substantially more men than women in this ward. In Ward 37, where the communities are located, women are more than men, and it has a population of 12,000 people of which approximately 1,500 reside in the Makushu and Mosholombe villages.

Table 11: Population in the Municipal Area, 2011

Area	Male	Female	Total
Makhado LM	236,795	279,236	516,031
Makhado Ward 21	11,079	9,959	21,038
Makhado Ward 37	4,917	6.087	12,004

Source: Statistics South Africa, Census 2011

In Ward 21 of Makhado LM the proportion of the population aged 19 years and younger is considerably smaller than for the respective municipalities. This proportion is also smaller than the equivalent for Limpopo

Province. This is due to most of the people residing in this ward are working in commercial activities with the families residing in nearby villages outside the ward. In Ward 37, where communities reside the age distribution is in line with the municipality and province.

4.1.5 Literacy rates and education

Less than 29% of the population who have passed school-going age in Ward 21 and 17.5% in Ward

37 have completed secondary school or obtained a post-school qualification. More than half of this population have completed some secondary school or lower.

Table 12: Education Profile in the Municipal Area for People Above Shool-Going Age, 2001

EDUCATION LEVEL	MAKHADO WARD 21	MAKHADO WARD 37	TOTAL
No Schooling	6%	22%	34.9%
Some Primary	19%	26%	12%
Some Secondary	47%	34.5%	31.9%
Senior Certificate	18%	16.5%	14%
Post School	11%	1%	7.2%
Total	100%	100%	100%

Source: Statistics South Africa, Census 2011

This relatively low education level will have a negative implication for employability, as indicated below.

4.1.6 General health and welfare

The Municipal area is reasonably well served with health infrastructure such as clinics and hospitals.

General problems experienced include:

- Services to facilities (water and electricity)
- Medicines and certain equipment
- Emergency vehicles and fuel
- Skilled and experienced personnel.
- Access to transport from rural settlements to health facilities
- The incidence of HIV/AIDS
- Diarrhea and respiratory diseases
- Water borne diseases such as Malaria and Bilharzia.
- Malnutrition among children and elderly people
- Immunisations
- Alcohol and drug abuse

Table 13: ***Makhado Population – HIV/AIDS***

CATEGORIES	SOUTH AFRICA	LIMPOPO	MAKHADO
% of population HIV+	10.9%	9.1%	9.0%
AIDS related deaths (% of total deaths)	46.7%	40.2%	39.0%

Although 9% of Makhado's population is HIV+, it is still lower than the provincial and national total. Approximately 39% of total deaths in Makhado are AIDS related, which is lower than the provincial and national total. Of concern, however, is that the amount of people with AIDS is increasing according to the IDP.

4.1.7 Basic Services and Housing

4.1.8 Housing

In the Makhado Local Municipal area about 16 807 people stay in houses that are below the required RDP standard and the current housing allocations are insufficient to meet the set targets. A rapid increase in the population will worsen the situation. Private land ownership is also very difficult to obtain particularly in the rural communities where there is no real housing market. Very few of the current home owners have bought their houses from another person, or have sold a house to another person. The majority of the population resides in the rural areas or in informal settlements.

Private land ownership is very difficult to obtain in the rural areas and there is no real housing market driven by the market forces of supply and demand. Very few of the current house owners have bought their current house from another owner, or have sold a house to another person. Most of the population residing the rural areas or in informal settlements. In general, people are informed about the housing schemes and policy through their tribal chiefs, ward committees and ward councillors.

Housing projects are focused in urban and in the rural areas where housing problems remain unsolved. Both the RDP and the Peoples Housing Project (PHP) policies are being used. For the RDP housing scheme approach, the Department of Housing and Local Government appoints developers who built houses where the communities are residing in the villages. For the PHP approach the DHLG transfers funds to the municipality whereby local builders from the communities are appointed to build the houses with the assistance of the beneficiaries.

In the rural settlements, stands are allocated by the Traditional Leader through the Permission to Occupy system.

4.1.9 Water and Sanitation

Households are generally well serviced as far as water is concerned in Ward 21. But in Ward 37, 38% of households have water supply that are below RDP levels.

*Table 14: **Household Water Service Levels, 2011***

CATEGORY –WATER SUPPLY	MAKHADO WARD 21	MAKHADO WARD 37	MAKHADO TOTAL
Piped (tap) water inside dwelling/institution	45%	0%	7%
Piped (tap) water inside yard	41.3%	0%	33%
Piped (tap) water on community stand less than 200m from dwelling	9.2%	38%	20%
Piped water on community stand between 200m and 500m from dwelling	0.7%	46%	28%
Private Borehole	2%	2%	2%
No access to piped (tap) water	1.8%	14%	10%
Total	100%	100%	100%

Source: Statistics South Africa, Census 2011

The number of households with not toilet facilities in the two wards under consideration is strangely high. This information from the 2011 does not fit the profile of the area. It will require investigation and verification.

Although the percentage of households with access to flush toilets have increased since 2001 to 2011, the majority of rural households still make use of pit latrines or have no access to sanitation facilities at all.

4.1.10 Electricity

The use of electricity for lighting is not as prevalent in the project area as in urban areas. A significant proportion of households (almost 26% in Musina ward 2 and 14 in Makhado ward 21) still use candles for lighting purposes. The use of wood for cooking is even more prevalent than the use of candles for lighting.

*Table 15: **Household Energy Source for Lighting, 2011***

CATEGORY - ENERGY OR FUEL FOR LIGHTING	MAKHADO WARD 21	MAKHADO WARD 37	MAKHADO TOTAL
Electricity	82%	50%	67%
Gas	0.5%	0%	0.2%
Paraffin	2.5%	30%	12.5%
Candles (not a valid option)	13.6%	20%	19.5%

CATEGORY - ENERGY OR FUEL FOR LIGHTING	MAKHADO WARD 21	MAKHADO WARD 37	MAKHADO TOTAL
Solar	0.9%	0%	0.3%
Other	0.5%	0%	0.5%
Total	7 312	5 481	100

Source: Statistics South Africa, Census 2011

4.1.11 Refuse Removal

The percentage of households that has access to weekly municipal refuse services increased from 9.4% to 12.3% from 2001 to 2011. Although the number of households that has their own dumps decreased, it still represents the majority of households in Makhado, which can have major implications for health conditions in the area. The number of households with no access to refuse facilities has also increased due to population growth. The Louis Trichardt town, air force base and surrounding townships have proper waste management systems with sufficient capacity for at least the short to medium term. The waste disposal sites in the rural areas do not have permits and observations indicate that households in the rural areas usually burn their waste. The waste sites also contribute to the contamination of ground water.

4.1.12 Economic Profile

4.1.12.1 Economic Sectors

*Table 16: **Gross Value Added for Makhado LM at Current Prices***

SECTOR	2009	2010	2011	2011%
Agriculture, forestry and fishing	470	457	467	3.6
Mining and quarrying	232	243	274	2.1
Manufacturing	434	442	459	3.5
Electricity, gas and water	306	342	380	2.9
Construction	430	519	616	4.7
Wholesale and retail trade, catering and accommodation	1921	2150	2406	18.6
Transport, storage and communication	1295	1340	1459	11.2
Finance, insurance, real estate and business services	2189	2422	2574	19.9
Community, social and personal services	596	747	823	6.3
General government	2782	3138	3507	27.0
Total	10656	11798	12966	100.0

Source: Quantec, 2013

The Makhado local economy has a value of production of close to R13 billion. Government is the driver of this local economy, mostly because of the public sector needs of the very large population, which includes education, public health, safety and security, as well as local government services.

The finance sector is significant, largely due to the imputed rent estimates of extensive tracts of land that command very high prices.

The third largest sector is trade and catering. Makhado town provides a service function for a large hinterland that stretches beyond its borders. Attractive landscapes have also provided opportunities to create accommodation and catering product offerings.

Agriculture is stagnant at best, but with a tendency to shrink. Important commodities include fruit, timber and meat.

Mining has never been an important sector in the Makhado local economy, but this could change in the foreseeable future due to the interest that the Soutpansberg Coalfield is receiving with its attractive metallurgical properties.

4.1.12.2 Employment Profile

Table 17: Employment Profile in the Project Area

AREA	EMPLOYED	UNEMPLOYE	DWS[1]	SUR[2] %	EUR[3] %
Makhado LM	78,768	45,705	24,383	36.7%	47.1%
Makhado Ward 21	10,636	821	269	7.2%	9.3%
Makhado Ward 37 2025	714	633	678	31.3%	65%

Source: Statistics South Africa, Census 2011

Unemployment in Makhado Ward 37 is significantly higher than in Ward 21. Only 35% of the theoretically employable people in Ward 21 are likely to have completed secondary school, which numbers approximately 382 people.

The total number of unemployed people (strictly unemployed as well as discouraged work seekers) in the two wards who have completed secondary school is therefore approximately 741. This suggests that the proposed The Duel Coal Project will have to recruit from outside the project area.

The census does not indicate employment per sector, but useful information in this regard can be obtained from commercial providers of statistical information such as Quantec. The information below has been procured from them. It indicates that only 1.2% of the workforce in Makhado LM is employed in the mining sector, but this could change in the foreseeable future considering the pipeline of potential coal mining projects. Increased employment in the mining sector will have a positive impact on employment in other sectors through the indirect employment effect, particularly on construction, trade and transport.

The Trade, Accommodation and Catering sector is the biggest employer in the municipality. Agriculture is also a major employer.

*Table 18: **Employment by Sector in Makhado Municipality, 2011***

SECTOR	MAKHADO	MAKHADO %
Agriculture, forestry and fishing	5578	7.8
Mining and quarrying	832	1.2
Manufacturing	4735	6.6
Electricity, gas and water	264	0.4
Construction	6062	8.5
Wholesale & retail trade, catering and accommodation	21193	29.7
Transport, storage and communication	2943	4.1
Finance, insurance, real estate and business services	5622	7.9
Community, social and personal services	10320	14.5
General government	13801	19.3
Total	71350	100.0

Source: Quantec 2013

4.1.12.3 Income profile

Household incomes are generally low, with 64% of households in Ward 21 and 90% in Ward 37 earning less than R38,200 per annum (R3200/month).

*Table 19: **Annual Household Income in the Project Area, 2011***

ANNUAL HOUSEHOLD INCOME	MAKHADO Ward 21	WARD 21 %	MAKHADO Ward 37	WARD 37%
Income Category				

[1] DWS: Discouraged Work Seeker
[2] SUR: Strict Unemployment Rate
[3] EUR: Expanded Unemployment Rate

No income	546	7.5%	450	16%
R 1 - R 4800	207	2.8%	279	10%
R 4801 - R 9600	453	6.2%	456	16%
R 9601 - R 19 600	1935	26.5%	783	28%
R 19 601 - R 38 200	1540	21.1%	576	20%
R 38 201 - R 76 400	792	10.8%	159	6%
R 76 401 - R 153 800	691	9.5%	69	2%
R 153 801 - R 307 600	595	8.1%	36	1.5%
R 307 601 - R 614 400	390	5.3%	9	0.4%
R 614 001 - R 1 228 800	118	1.6%	0	0%
R 1 228 801 - R 2 457 600	26	0.4%	3	0.1%
R 2 457 601 or more	19	0.3%	0	0%
Total	7312	100	2820	100

Source: Statistics South Africa, Census 2011

4.1.12.4 Human Development Index

The HDI is a summary measure of human development. The HDI measures the average achievements in an area in three basic dimensions of human development:

- A long and healthy life, as measured by life expectancy at birth
- Knowledge, as measured by the adult literacy rate (with two-thirds weight) and the combined primary, secondary and tertiary gross enrolment ratio (with one-third weight)
- A decent standard of living, as measured by GDP per capita.

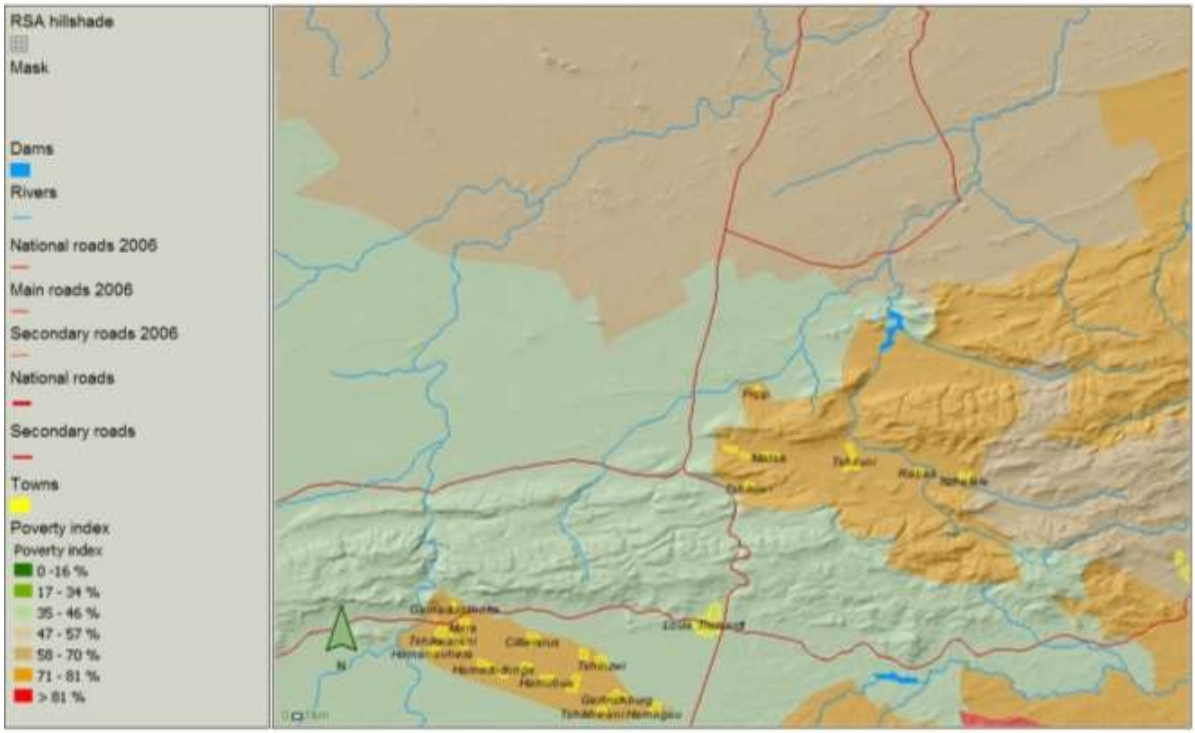

Figure 12: Poverty Indicators

The unemployment rate in Limpopo is 36.1%, which is the highest in South Africa, whereas, the households under the poverty line of R800 per month are 36.4%. This situation is much worse than the national rate. The Human Development Index for Limpopo Province is 0.63 which is lower than the national HDI (0.69). The HDI for Makhado is 0.65 indicating that relatively higher life expectancy, income and literacy levels are present in Makhado than in Limpopo, although it is still lower than the national average. The poverty gap in Makhado represents 0.5% of the poverty gap in Limpopo Province. This ranks Makhado as an area with one of the highest poverty gaps in Limpopo Province.

4.1.13 Regional Development needs

The needs assessment was conducted based on the current valid Integrated Development Plan of the Makhado Local Municipality and initial meetings held with stakeholders in Government and the Local Communities. Ongoing consultation may strengthen these needs or reveal further needs.

Table 20: Development Needs

GENERAL	SPECIFIC	TYPE OF NEED
Infrastructure and Service Delivery	Reliability, quantity and water supply and sanitation service distribution Upgrade of internal and main roads Electricity Supply Waste management	Establishment / Installation of then required services and infrastructure
Education / Skills Support Services and Infrastructure	Reduce high levels of illiteracy and lack of skills base	Training Centre Education Facilities
	Support education facilities and schools	Establishment / Installation of the required services and infrastructure at schools and clinics
Employment	Job creation opportunities	Economic Development linked to waste management, tourism, agriculture, SMME's
Business	Business opportunities	Economic Development
Agriculture	Rural subsistence farming	Optimize the productive use of arable land through supporting agribusiness development, co-operatives, value chain developments
Technology and communication	Community access to community facilities, technology and communication	Support community centres with access to information technology

GENERAL	SPECIFIC	TYPE OF NEED
Vulnerable Groups	Participation of Disabled, women and youth in all projects and programmes	Ensuring participation and involvement of vulnerable groups in projects
Natural Resources	Protection of natural resources	Land use management Environmental Framework Awareness Protection of resources
Housing	Provision of RDP level housing	Backlog in RDP housing provision

4.2 Local Social Environment (Community analysis)

For the analysis of the local social environment a combination of the survey results and the Census data was utilised. In some aspects Census data is not available at village level, estimations was used from Census data at a ward level.

4.2.1 Demographic

*Table 21: **Population in the Project Area***

Settlement	Households		Population		Household Size
	2015	2019	2015	2019	
Makushu	173	345	913	1725	5
Mosholombe	118	282	596	1410	5
Pfumembe	120	241	720	1446	6
Total	**2426**	**2887**	**4244**	**6600**	**5**

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

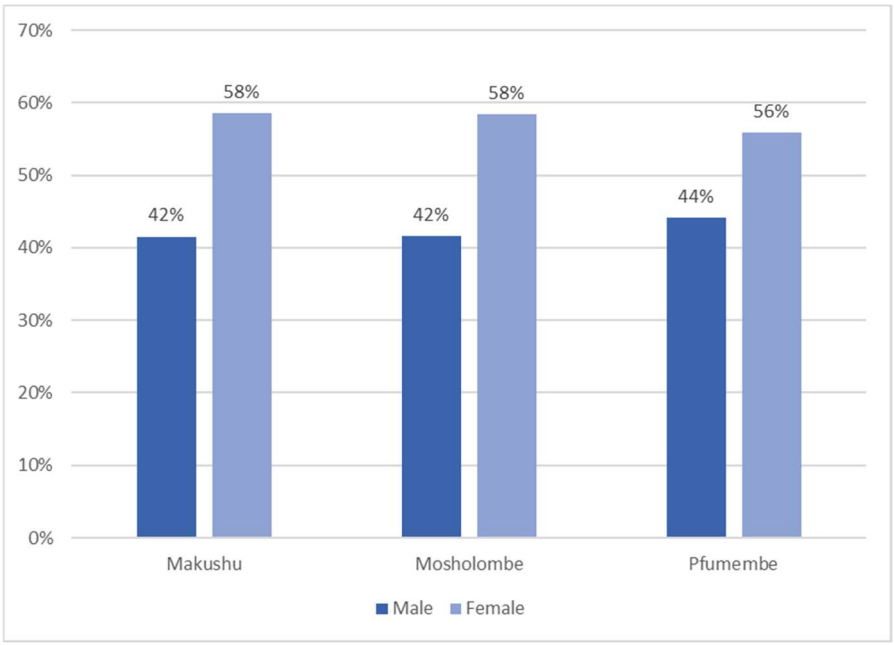

Figure 13: Gender analysis in the Project Area

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

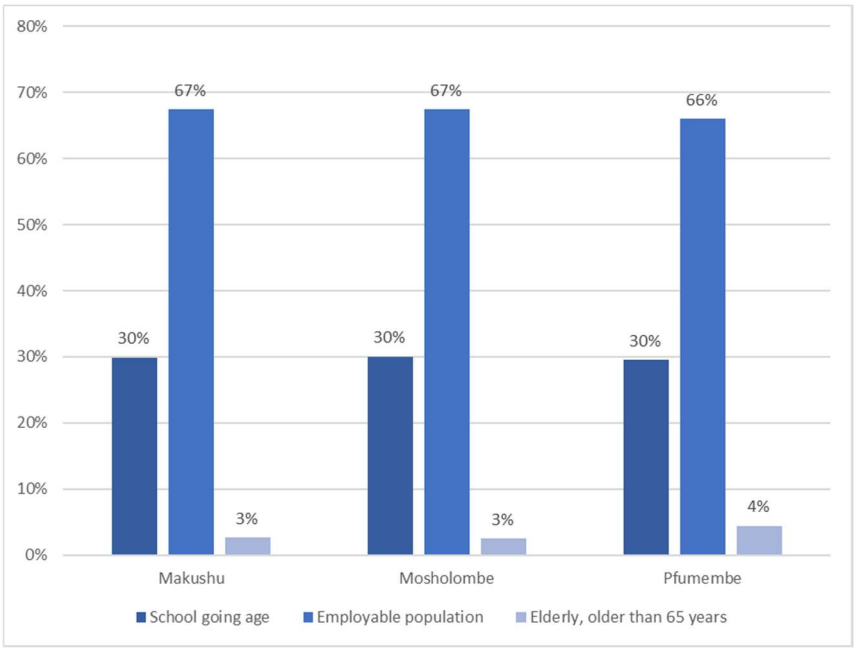

Figure 14: Age analysis in the Project Area, 2015

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

4.2.2 Local Literacy rates and education

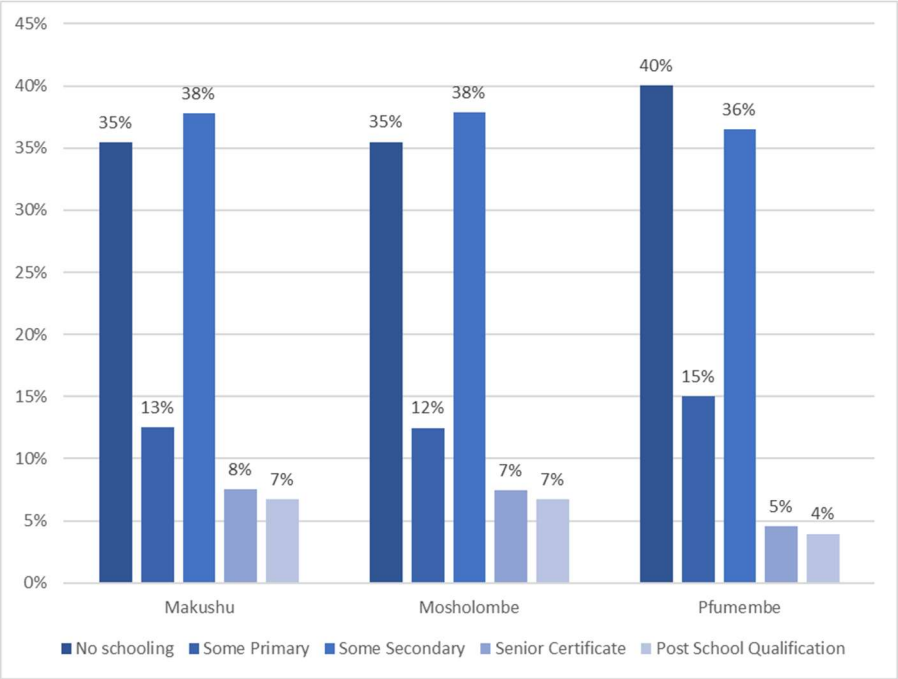

Figure 15: Education Profile in the Project Area for People Above School-going Age, 2015

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

4.2.3 Local Language

Tshivenda is spoken by the majority of the population of all three villages. Other languages understood by local community include:

- Sepedi
- Tsonga
- Tshwana
- Zulu

Approximately half of the total population have some level of understanding of English, at least one person per household can understand and read English.

4.2.4 Local Economic Profile

4.2.4.1 Employment Profile

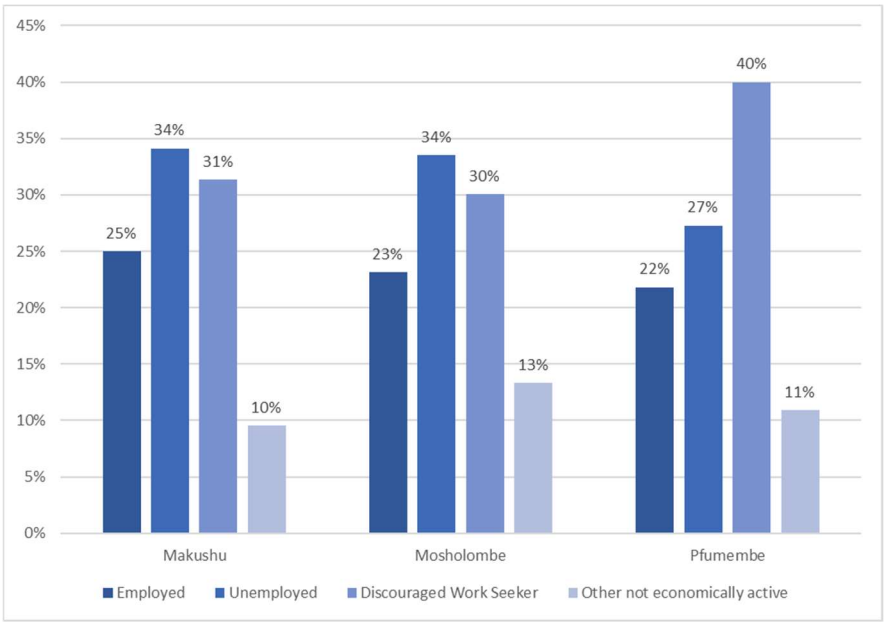

Figure 16: Employment Profile in the Project Area, 2015

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

The average unemployment rate across the three villages is at 36% with a further 38% discouraged work seekers. Therefore the real unemployment rate is at 74%, with the highest in Pfumembe at 76%.

4.2.4.2 Income profile

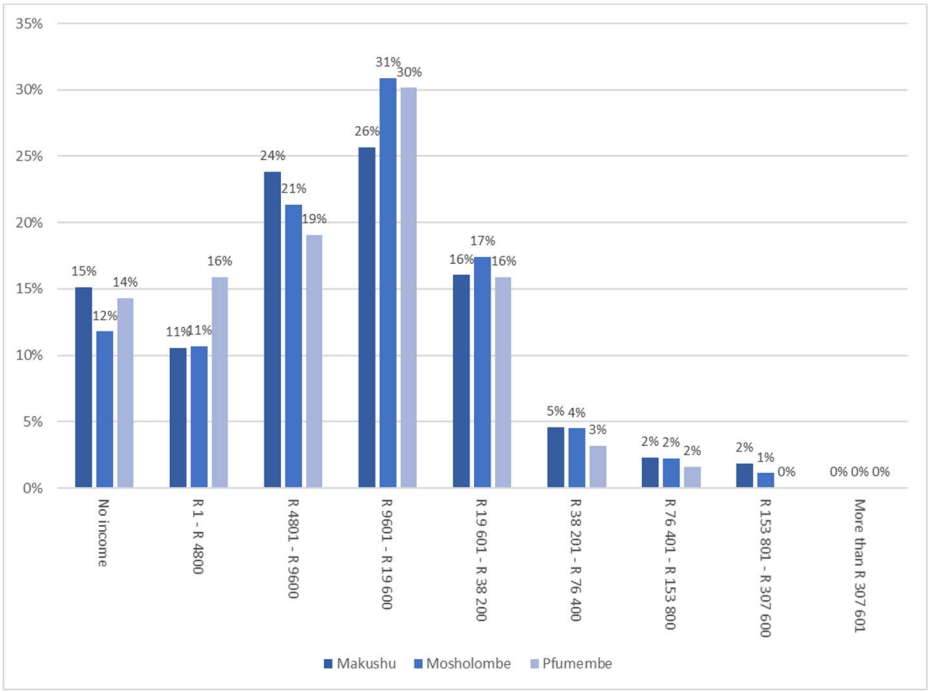

Figure 17: Annual household income

Source: Statistics South Africa, Census 2011 as well as Household Survey, 2015 and updated estimates 2019

If an indigent income of R1,600 per month is utilised, then an average of 76% of households can be classified as poor with again Pfumembe with the highest % at 79% with an income less than R1,600 per month. Close to 50% of the households have an income less than R800 per month.

4.2.5 Local Businesses

Local business such as Spaza's, Shebeens, and Informal markets of goods are located within all three villages.

4.2.6 Community Agricultural Activities

4.2.7 Communal Crop farming

In the community crop farming is limited to small vegetable gardens within residential yards, this is mostly due to soil conditions in the area. In consultation with the communities.

4.2.8 Livestock Farming

Grazing land on the property Telema 190 MT is utilised as communal grazing. All three communities utilised portions of the property for grazing.

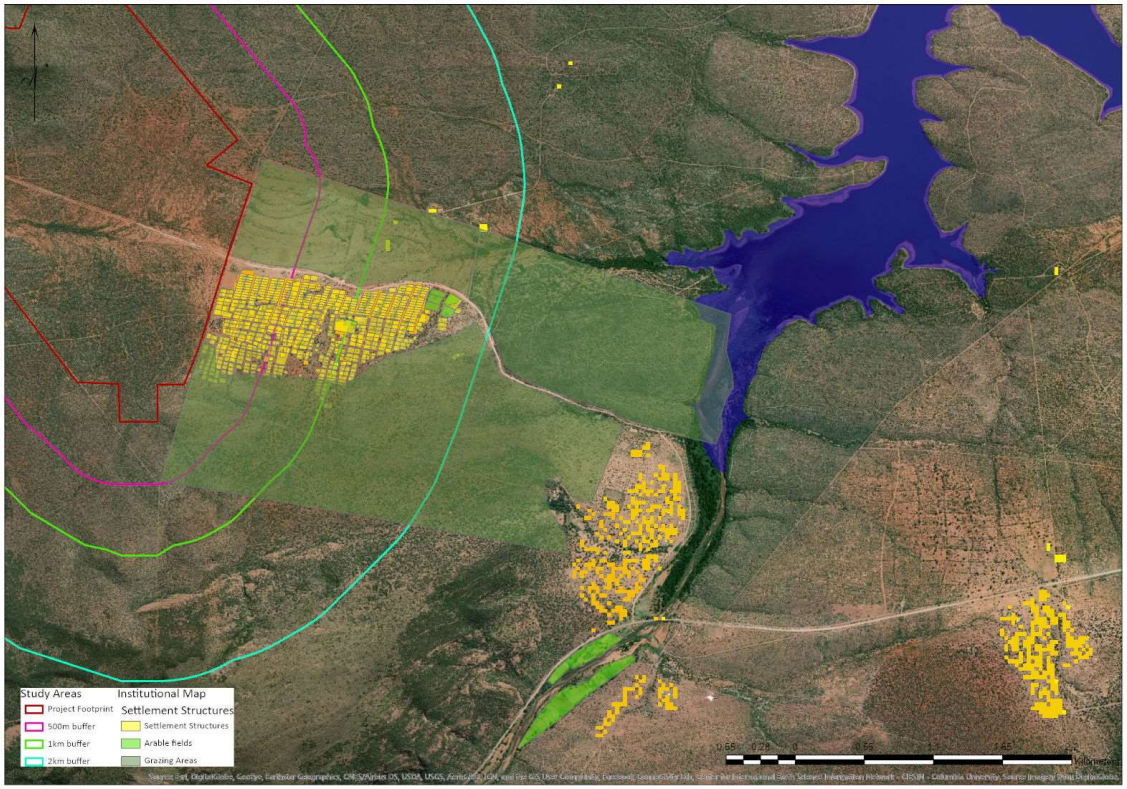

Figure 18: Grazing areas utilised by Makushu, Mosholombe and Pfumembe villages

4.2.9 Medicinal Plants

Some medicinal plants are sourced in the surrounding area, especially towards the river, but most are sourced from the mountainous areas.

4.2.10 Services and Infrastructure

4.2.11 Water and Sanitation

The communities have water supply from a central borehole water supply system with a reservoir located at Pfumembe. The villages have communal water supply with standtaps, some more than 200m from their nearest tap.

Table 22: Water Supply

WATER SUPPLY	MAKUSHU	MOSHOLOMBE	PFUMEMBE	TOTAL
Water Supply System	Central Borehole Supply System			
Number of communal standtaps	5	4	10	19
Households per tap	48	39	19	106
Population per tap	183	149	72	404

4.2.12 Energy

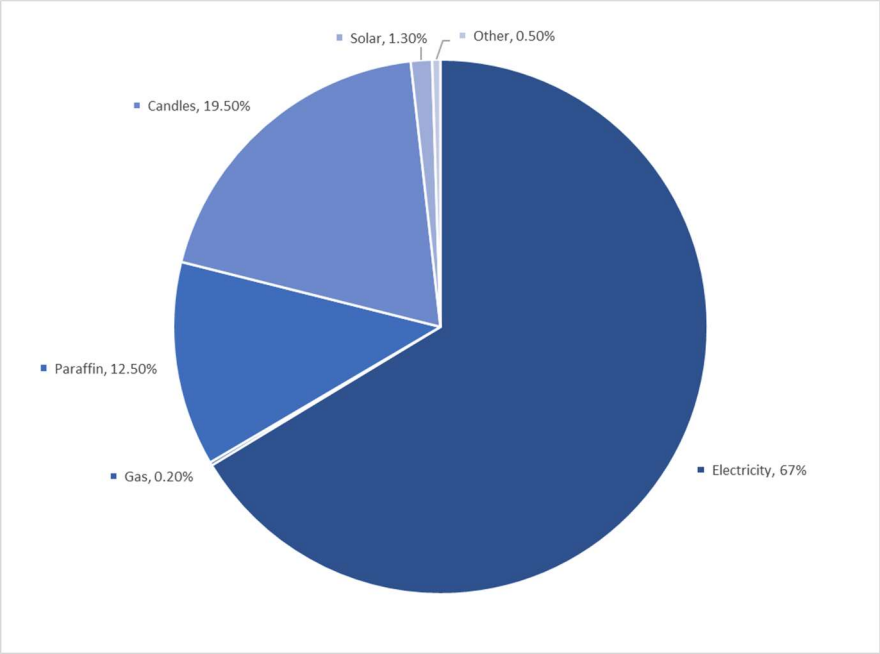

Figure 19: Energy Supply

Although the number of households with access to electricity has increased in the past few years, there are still households that do not have access to electricity. Electricity outages are also regularly experienced. Some of the newer sections in Mosholombe and Makushu do not have distribution yet.

Electricity supply and capacity to rural areas for further developments have been noted as a problem and most agricultural, commercial and small industrial developments are inhibited due to this.

4.2.13 Roads

The communities gain access to commercial nodes via various road networks. The map below indicates the main road networks. Roads utilised by the community is in a poor state and not maintained regularly.

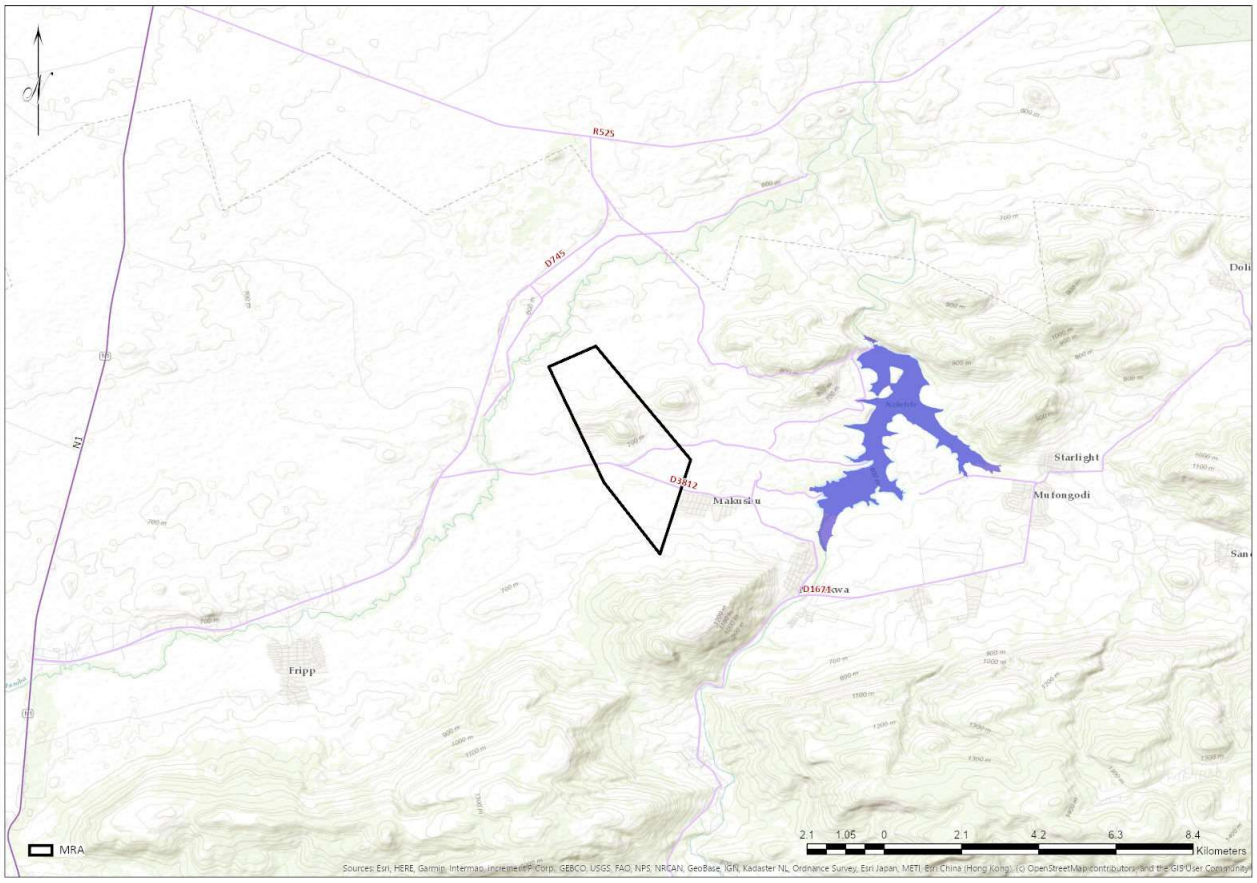

Figure 20: Road networks

The majority of the communities utilise public transport and private vehicles. Public Transport is costly, vehicles are not in a good state and service is unreliable.

Figure 21: **Nzhelele road turn-off**

4.2.14 Health Services

The project area is serviced by three clinics, one located in Mudimeli (approximately 14km west), a clinic located in Straighter (approximately 23km south) and the Dzanani / Makhado clinic (approximately 22km south-west). Mobile clinics services Makushu/Mosholombe village (once a month), but no mobile clinic serves Pfumembe village.

4.2.15 Schools

The Makushu and Mosholombe communities share a Primary school called Mapanya Primary:

- The school has 420 learners, 11 educators and 7 classrooms, meaning 38 learners per educator or 60 learners per classroom. Overcrowding has been listed as an issue.
- The school has a feeding scheme supported by Government but have no Kitchen facility for the preparation of food. It has also been noted that the Government subsidy has been reduced.
- The school also do not have an Admin block, Library or Sport fields
- The school has electrical and water supply but sub-standard sanitation facilities for the learners
- The learners come predominantly from the Makushu and Mosholombe communities.

The Pfumembe community has a Primary school called Musekwa Primary:

- The school has 245 learners, 6 educators and 6 classrooms, meaning 41 learners per educator and classroom. Overcrowding has been listed as an issue.
- The school has a feeding scheme supported by Government but have no Kitchen facility for the preparation of food. It has also been noted that the Government subsidy has been reduced.
- The school also do not have an Admin block, Library or Sport fields

- The school has electrical and water supply as well as sanitation facilities for the learners
- The learners come predominantly from the Pfumembe community.

All three communities have indicated that the Tshianane Secondary school located in Ngundu (7.5km from Makushu and Mosholombe and 3.5km from Pfumembe) is utilised for a Secondary School. The Secondary school has 450 learners, 13 educators and classrooms, meaning 35 learners per educator and classroom. This school has similar challenges with no admin block, and limited sport fields. There are also electrical and water supply with sanitation facilities. The major challenge faced by this school is that it does not offer Maths and Science as subjects which limit the learners going to these schools.

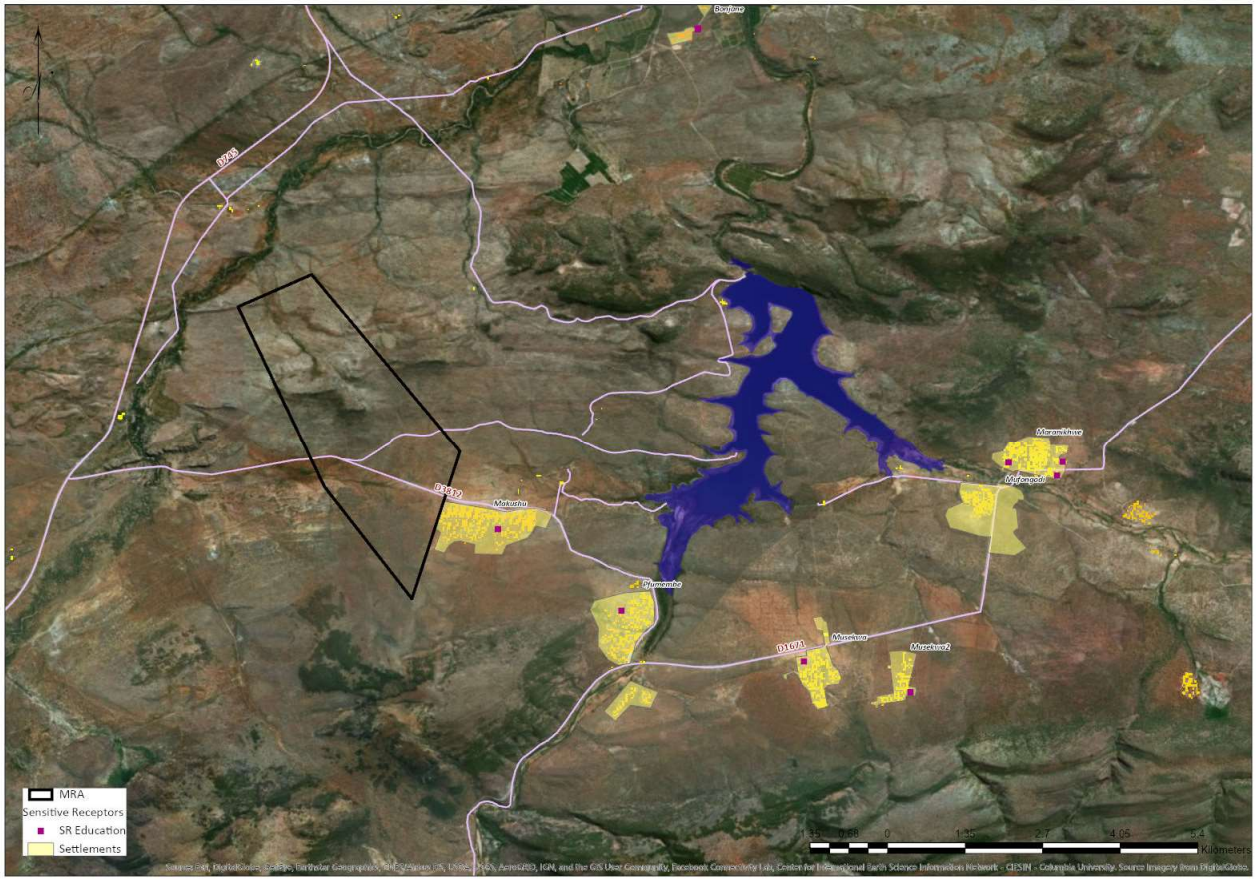

Figure 22: Map indicating schools in the project area

Figure 23: Photo of the Mapanya Primary School

4.2.16 Housing

The villages have a combination of Formal, Traditional and some informal housing. Households are located per stand with limited extended families residing on one stand.

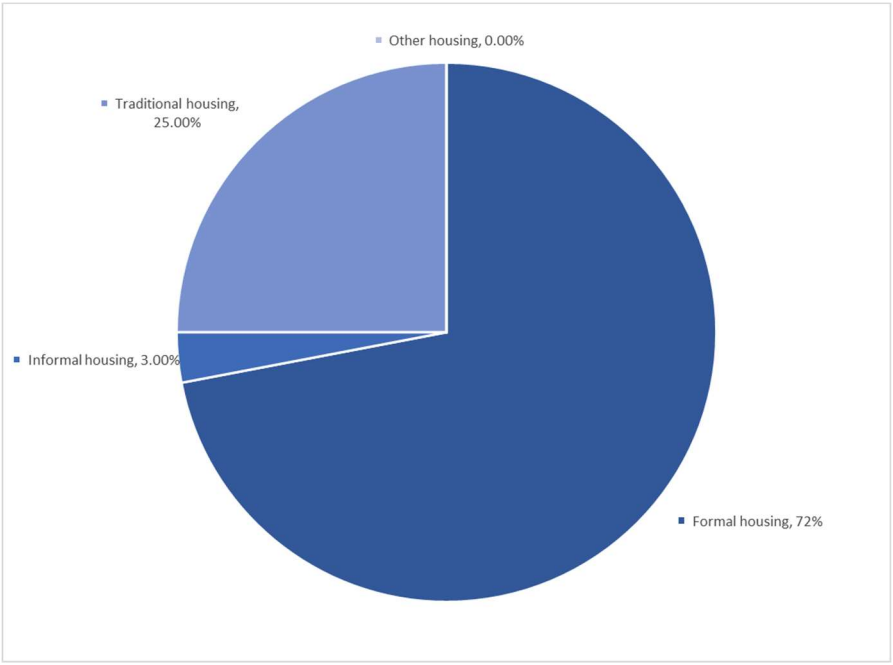

Figure 24: Housing Types

The following photos show typical types of housing:

Figure 25: Church building located in Mosholombe

4.3 Land Claimants

The property is further also under Land Claim by the Musekwa and Nemamilwe Communities under Government Gazette 29397 published on 24 November 2006.

4.4 Mining Right Area

The property is owned by Clint Howes Family Trust, who is in the process of selling the property to the applicant. The property has been used for game and livestock grazing, with occasional private hunting.

5 ANTICIPATED PROJECT IMPACTS AND BENEFITS

5.1 Interaction between Environmental and Social Change Drivers

It is often the case that one type of impact (for example an environmental impact) can lead to a different type of impact (for example a social impact). An example is air pollution (environmental impact) due to a new factory that can result in impacts on the health of surrounding communities (social impact). Therefore, it is important, when conducting a SIA, to consider all the impacts identified by the other studies conducted for the same development, such as impacts identified in an EIA Report, Traffic Impact Assessment, Visual Impact Assessment and Biodiversity Assessment.

5.1.1 Air quality sensitivity mapping

The exposure to Particulate Matter with an aerodynamic diameter of less than 10 microns (PM10), is regarded as the most critical social aspect associated with The Duel Project as this could lead to health impacts.

South Africa published National Air Quality standards in respect of PM_{10} (SANS 1929:2011) which stipulates a daily (24-hour) average exposure limit of 75 µg/m^3 and an annual average exposure limit of 40 µg/m^3.

The following limits were selected for air quality:

- High Impact – PM_{10} daily exposure of above 100 µg/m^3
- Medium Impact - PM_{10} daily exposure of above 85 µg/m^3
- Low Impact - PM_{10} daily exposure of above 75 µg/m^3

The air quality sensitivity map is presented in Figure 26. It is noted that this is for the worst case, indicating the predicted daily ground level concentration of Particulate Matter during a blast event. Blasting is not a continuous activity and is limited to a maximum of three times a week.

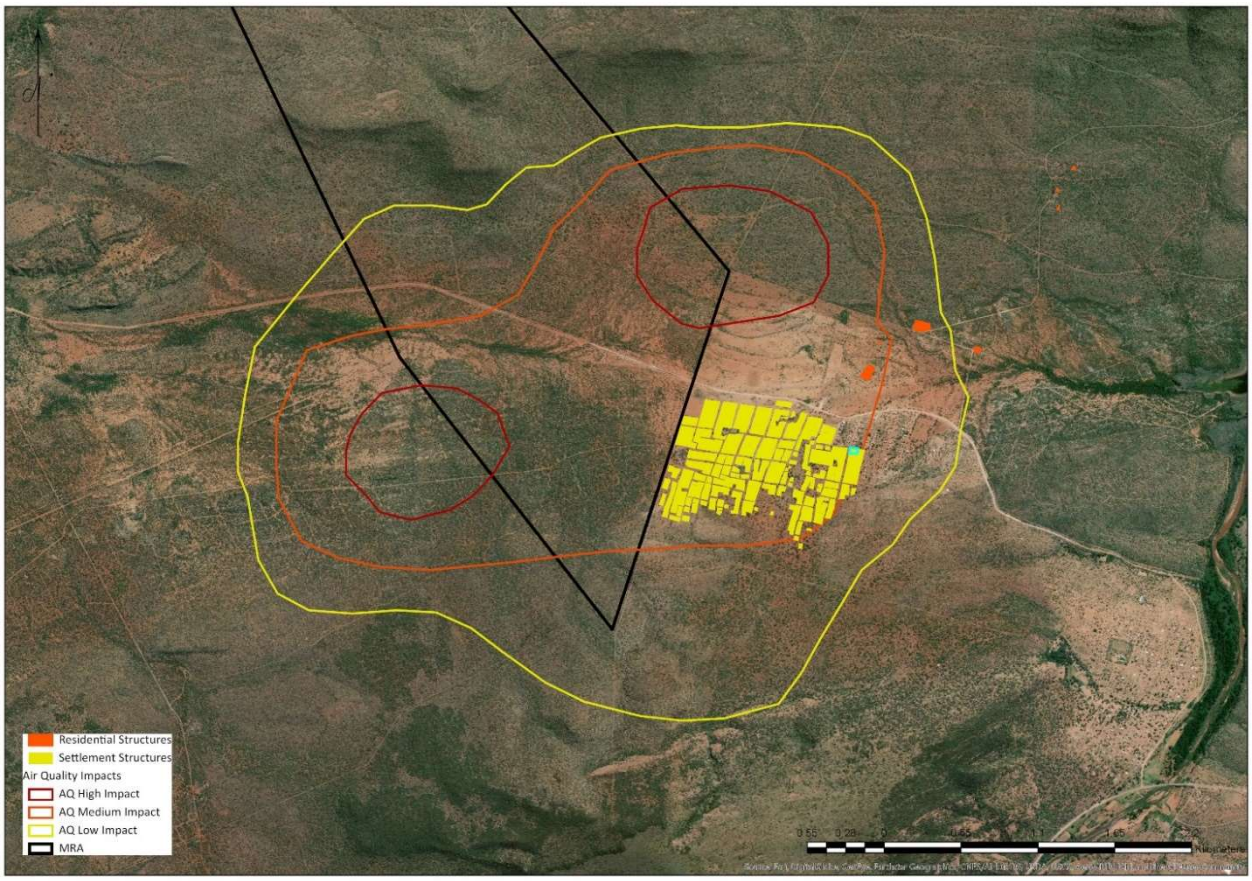

Figure 26: Air quality sensitivity map

5.1.2 Ambient Noise sensitivity mapping

The closest noise sensitive receiver to the mine is the Makushu Village and according to the IFC regulations regarding environmental noise, the receiver is impacted if the future calculated difference is higher than +3 dBA. The future calculated difference for the Construction Phase (day, night and day/night noise levels) are all well below +3 dBA increase. Thus, the construction phase of the project is likely to have a minimal (negligible to very low) impact on the surrounding community.

Opencast Mining for day, night and day/night noise levels are all well below +3 dBA increase for the initial stages of the opencast pit development. During the later life cycle of the opencast pit (maximum opening and production) the noise rating for the Day-Night level increases with +10.41 dBA.

Even with mitigation measures in place, the night-time noise level increase from the baseline is well above +3 dBA. This is caused by the model assuming that the plant will process the ROM throughout the night (with active material handling source, hauling trucks travelling in and out of the plant to the pit, crushing and screening process active). Further measures should therefore be investigated to lower the noise levels to an acceptable level. The following limits were therefore set for ambient noise:

- High Impact – 55 – 60 dBA or more
- Moderate impact – 50 – 55 dBA
- Low impact – 45 - 50 dBA

The noise sensitivity map is presented in Figure 27.

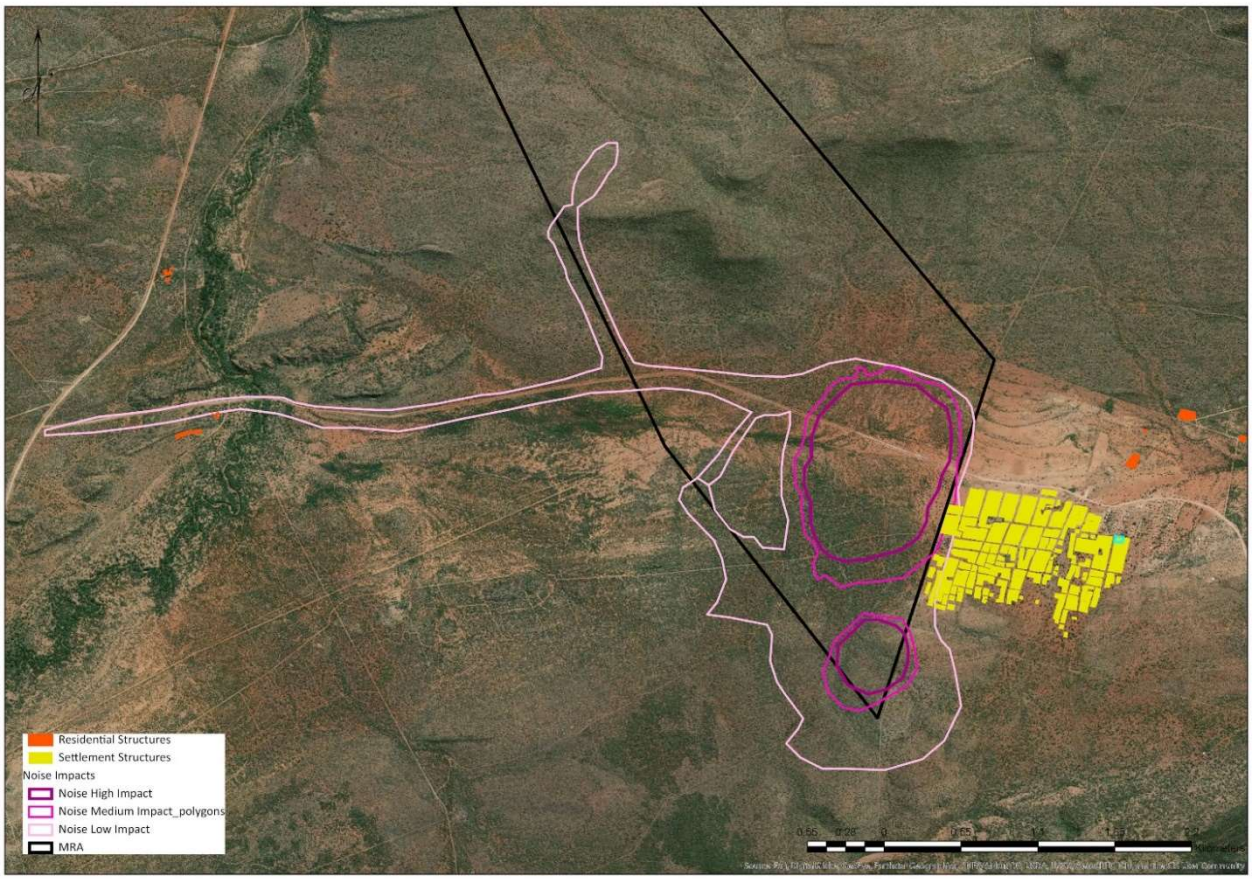

Figure 27: Noise sensitivity map

5.1.3 Blasting sensitivity mapping

The following was concluded from the blasting impact assessment:

- Exclusion zone = 472 m, resulting in resettlement of households and evacuation procedures during blasting (animals, pedestrians, vehicles)
- Air blast influence zone = 1 250 m with no controls, resulting in rattling windows, feelings of annoyance and fright, no damage in general.
- Ground vibration influence zone = 800 m with no controls, resulting in possible damage to structures, e.g. cracking of houses.

Based on the outcome it was recommended that:

- All permanent residences within 500 m of the mining area be resettled.
- All persons and animals within 500 m from a blast be cleared (evacuated).
- Road closure will be required when blasting is done at distances closer than 500 m to any roads or footpaths.
- Photographic survey of all structures up to 1 500 m from the pit area be done prior to any blasting activities.

Although the exclusion zone (evacuation zone) for fly rock was calculated as 472 m from any blasting event; however, an exclusion zone of 500 m was recommended by the blasting specialist. The area within 500 m of the opencast pit was therefore considered to be a high-risk area. The blasting sensitivity maps are presented in Figure 28 to Figure 30.

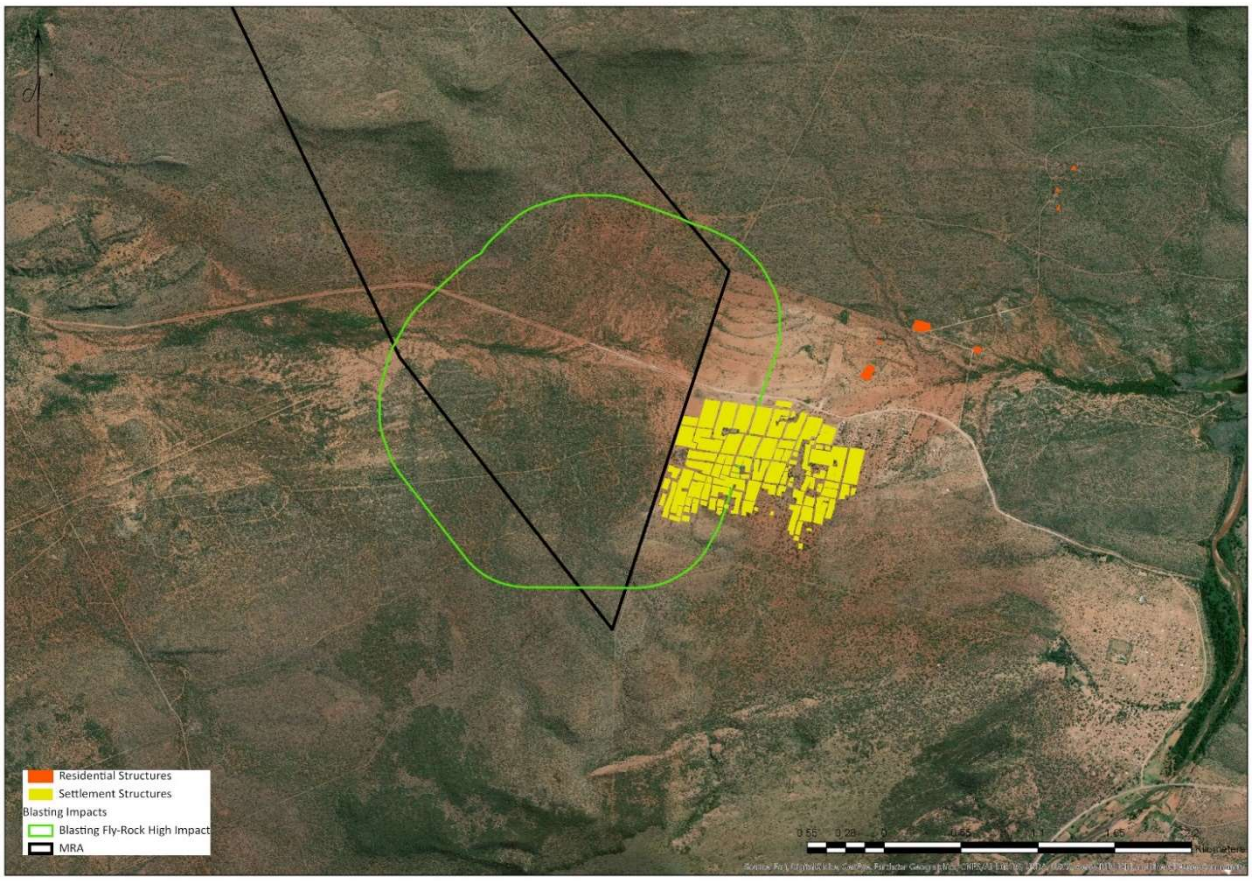

Figure 28: Blasting exclusion zone for Fly-rock

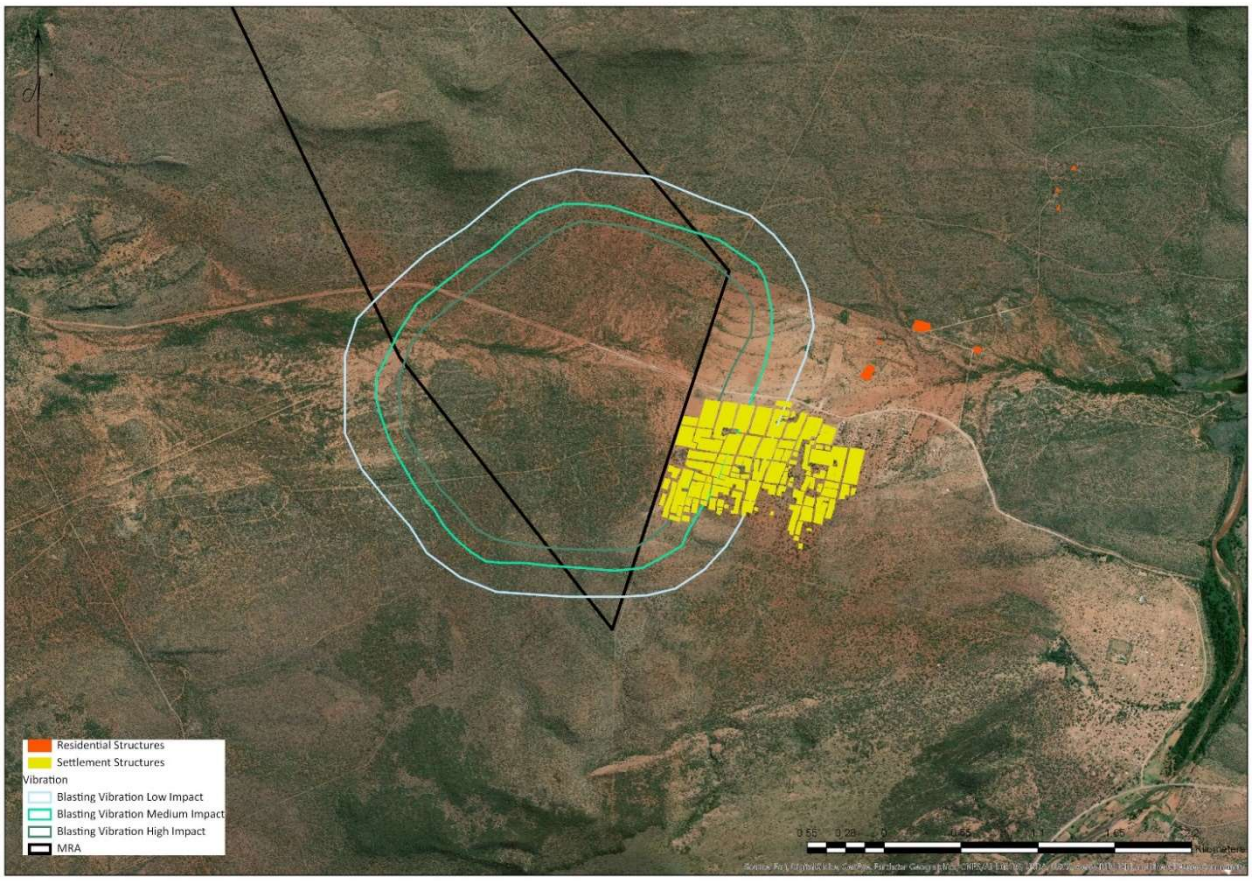

Figure 29: Blasting sensitivity map (Vibration)

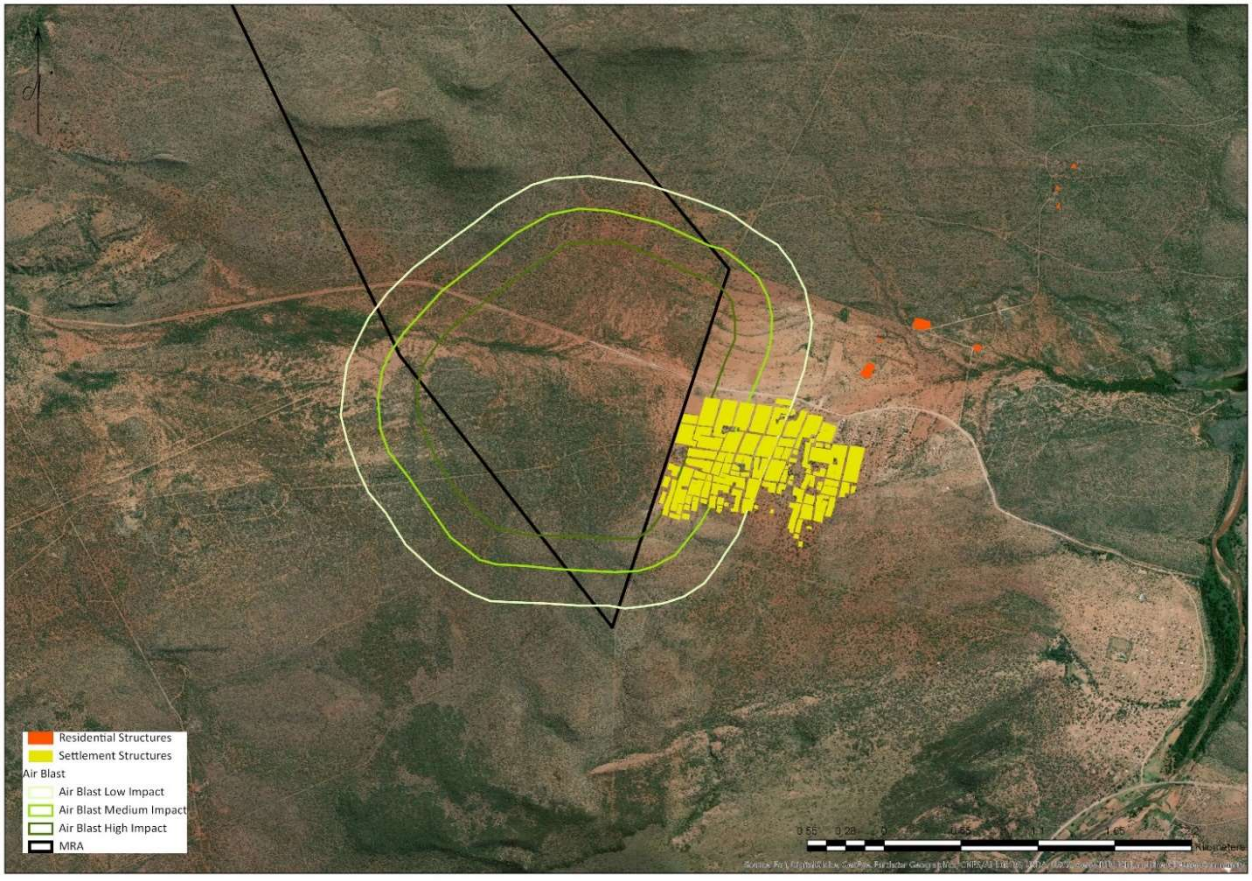

Figure 30: Blasting sensitivity map (Air Blast)

5.1.4 Groundwater sensitivity mapping

The boreholes that may potentially be impacted by the Duel Project, as identified by the groundwater specialist assessment conducted by WSM Leshika, are indicated in Figure 31.

It is important to note that impacts on groundwater were not considered for the cumulative sensitivity mapping and sensitive receptor risk classification discussed in the following sections, because the groundwater drawdown is based on the cumulative groundwater modelling, which includes the other proposed mining activities in the area, and will only manifest if all these developments do take place.

Groundwater monitoring must therefore be implemented to confirm the predictions of the groundwater model as mining progresses to determine the project-specific impacts.

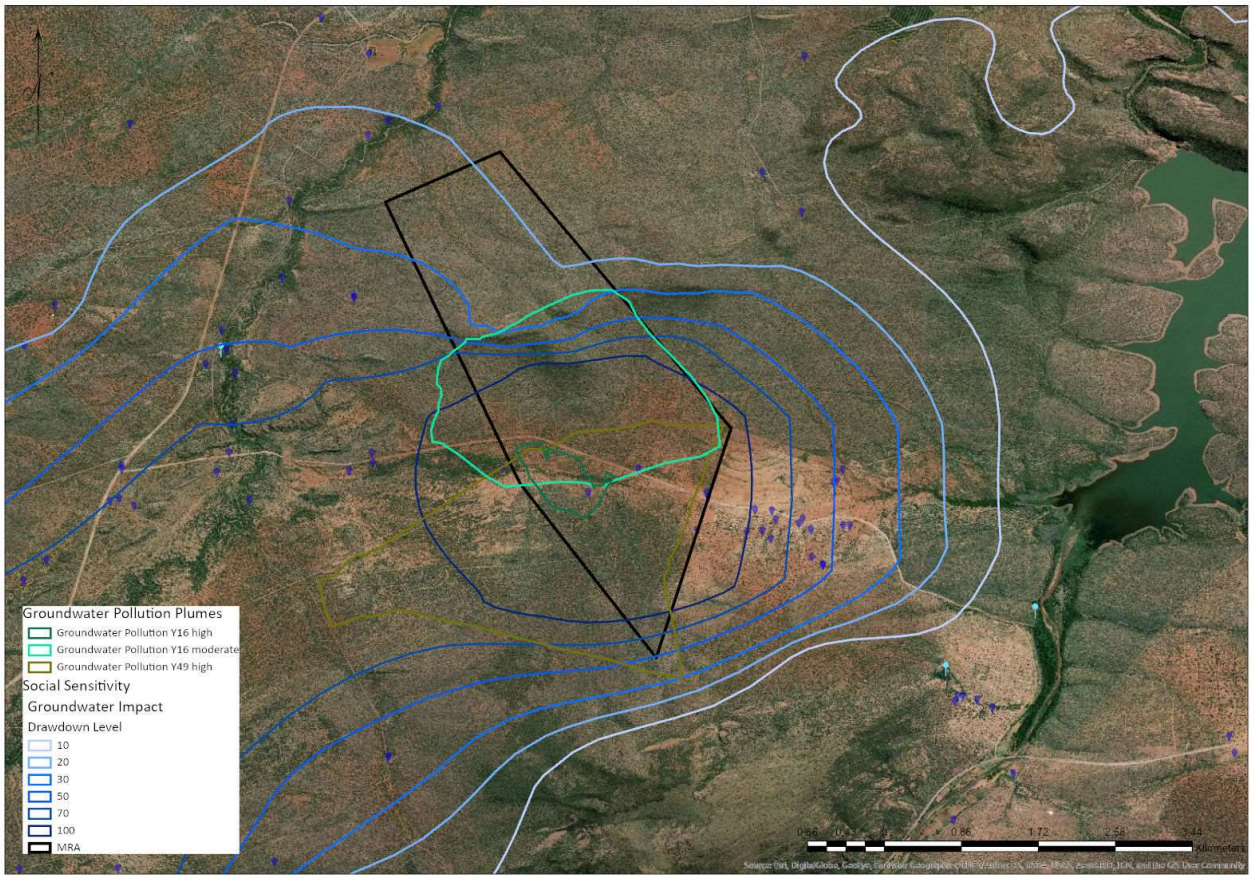

Figure 31: Groundwater sensitivity map (Groundwater Levels & Quality)

5.1.5 Cumulative (combined) sensitivity mapping

Based on the sensitivity mapping for air quality, ambient noise and blasting, a cumulative (combined) sensitivity map was compiled, and is presented in Figure 32.

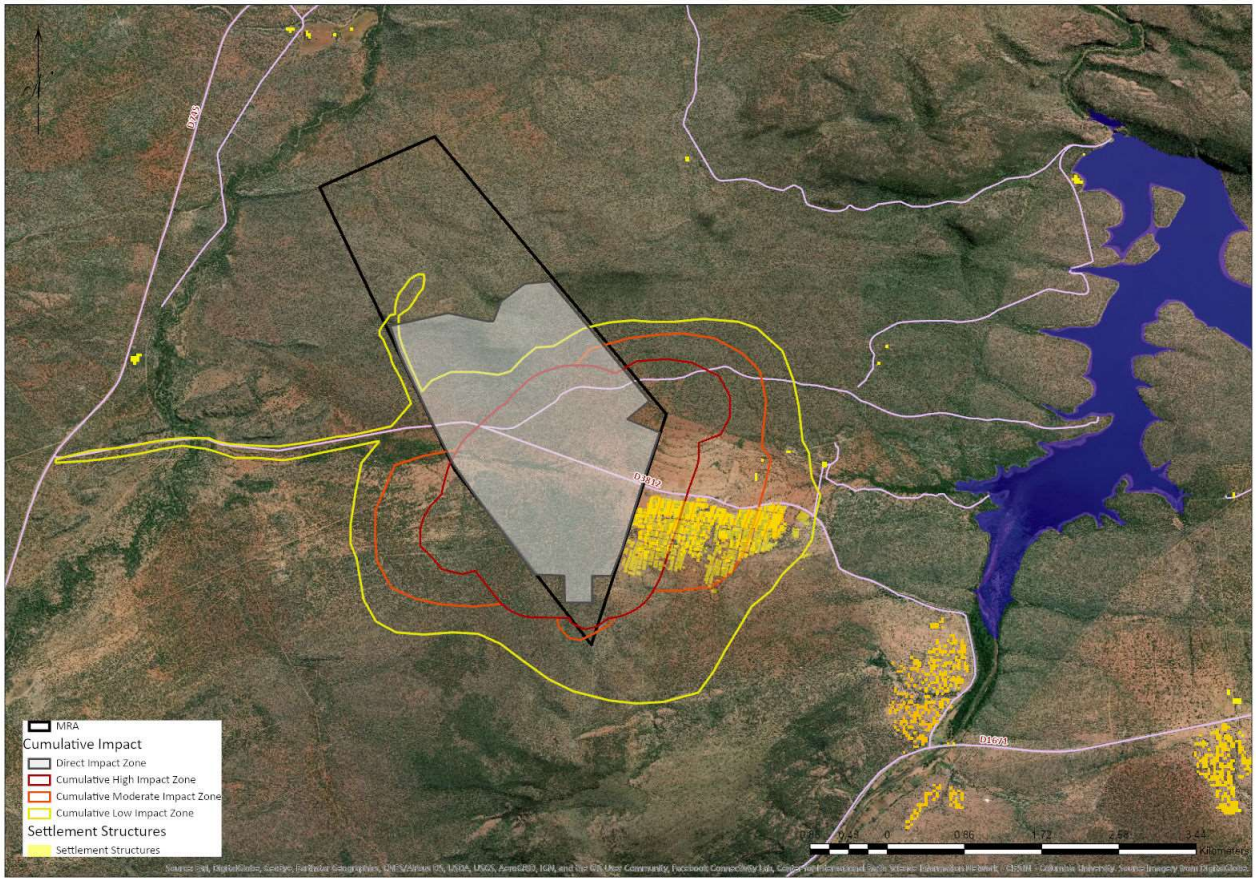

Figure 32: Cumulative (combined) sensitivity map

5.1.6 Sensitive Receptor risk classification

To determine the potential socio-economic impact associated with The Duel Project, the sensitive receptors within the overall impact zone were classified into categories related to the cumulative impact zone, namely:

- Direct (land take) impact zone: All sensitive receptors / property directly impacted by the proposed infrastructure and mining layouts and need to be purchased to facilitate mining. Existing land use on the property will cease.
- Combined high impact zone: These sensitive receptors will have a high impact during some stage of the proposed mining, and specifically in respect of air quality and blasting. If appropriate mitigation measures cannot be implemented to reduce the impacts below the acceptable standards, residential and other structures may need to be resettled or compensated for. Monitoring must be implemented to determine the impacts over the LOM and the need for land take.
- Combined moderate impact zone: The sensitive receptors and land use will have a moderate impact in respect of mainly air quality and noise, with the potential for some structural damages due to uncontrolled air blast events. Land use will be able to continue. In the event of any damage, compensation should be negotiated with the mine, which may lead to a financial impact on the mine.
- Low impact zone: No detrimental social or economic impacts are expected on the sensitive receptors within this zone and existing land use will be able to continue. Some nuisance impacts may be experienced, specifically in respect of noise.

Any sensitive receptor situated outside the overall impact zone should not have any risks to its health and well-being and/or livelihoods. It is important to note that this risk classification doesn't consider potential nuisance impacts/risks as these are considered subjective and depend on individual perceptions which cannot be scientifically substantiated at this moment. The predicted impacts should be confirmed with monitoring over the LOM and further impact modelling as appropriate. The impacted sensitive receptors are indicated in Figure 33.

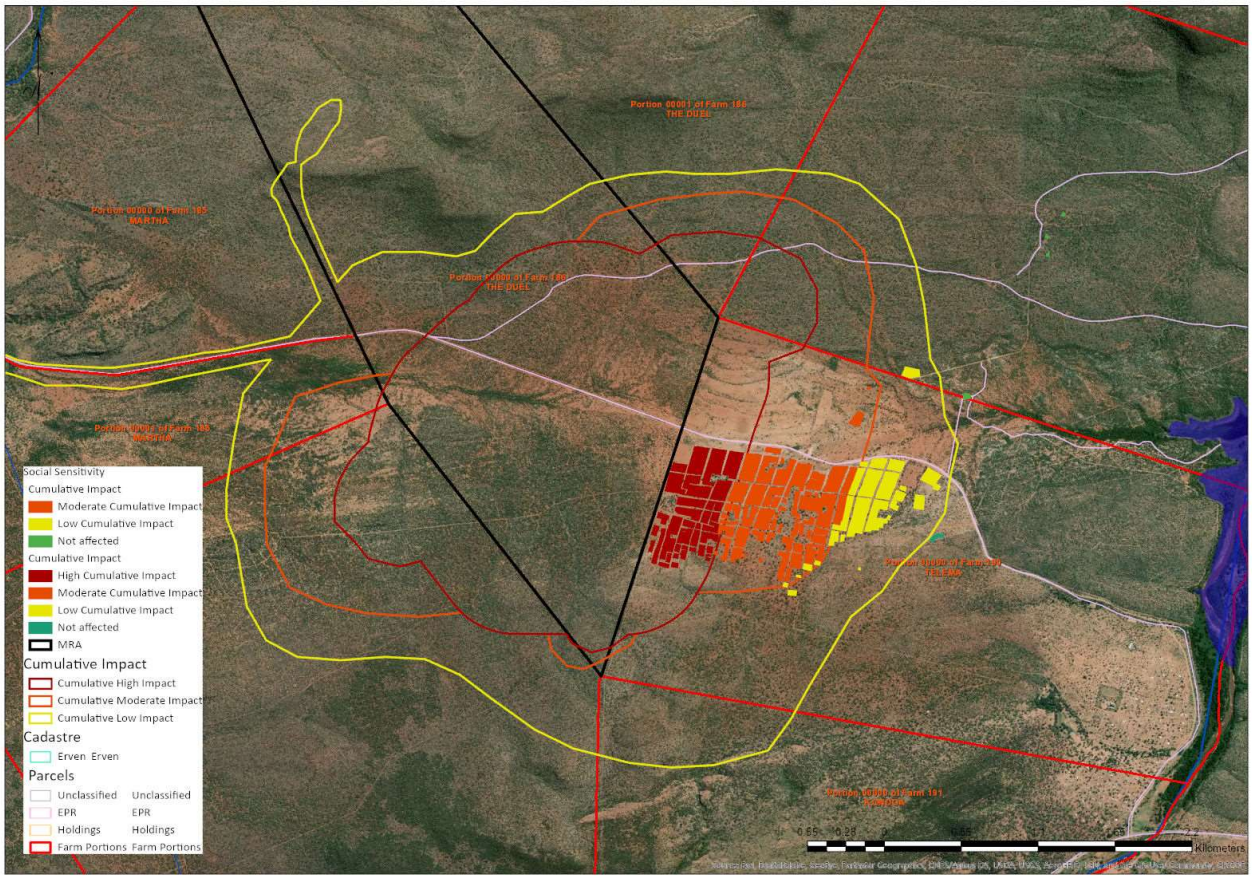

Figure 33: Property risk classification

The number of sensitive receptors/structures within the three impact zones are summarized below.

Settlement Structures

	High Cumulativ...	High Cumulativ...	199
	Moderate Cumu...	Moderate Cumu...	298
	Low Cumulative...	Low Cumulative...	126

Other Residential Structures

	Moderate Cumu...	Moderate Cumu...	2
	Low Cumulative...	Low Cumulative...	1

5.2 Social Capital

5.2.1 Population and Demographic Change

Typically, demographic change moves through three major phases commencing with construction of the project and movement to the area of a construction workforce, followed by the operational workforce and then the additional multiplier effects. The Project will require approximately 550 employees (including staff and contractors) for the operational phase of the project. The multiplier effects have been estimated and is included in the macro-economic study reported separately. Predictions about location have been based on the location of the proposed the Duel Project workforce requirements, the high-level skills assessment of the local communities, and an assessment of labour and housing constraints in the region.

Previous studies and experience in the field indicated that, in South Africa with its high levels of unemployment, any new development or rumour of a new development is likely to lead to an influx of people to the affected area. It is thus anticipated that potential job seekers would start moving to areas specifically near the proposed project (host and neighbouring communities), prior to the construction phase in an attempt to secure employment during the construction phase. The potential influx of job seekers and their anticipated settlement in the low-income areas are likely to lead to direct indirect and cumulative social impacts, for example, conflict amongst local communities and job seekers, social disintegration, pressures on existing infrastructure and services, housing, etc.

Even if it is the intent of Subiflex (Pty) Ltd to source workers locally, it is unlikely to discourage people from elsewhere entering the area. It is this perceived prospect of employment opportunities, fueled by potential rumors about the number of jobs to be created that would attract outsiders. Furthermore, introducing job opportunities into a resource-starved environment (see unemployment figures) is a potential source of competition between unemployed locals - a situation that would be exacerbated by outsiders, potentially resulting in conflict – the felt impact of the change process. This process of potential in-migration is likely to affect all neighbouring rural communities.

Population and Demographic Change are caused by the population growth and influx of job seekers and employees. There are impacts felt at the initial change, and impacts that manifest over time. It is anticipated that the influx of job seekers and employees from outside the area will have the following impacts:

- Increase (influx) of job seekers in the area may change the rural characteristics and dynamics of the rural traditional area, creating opportunities for social pathologies
- Increase (influx) of job seekers in the area may create competition for employment opportunities, that may lead to conflict between job seekers and local communities

- Local population growth creating additional pressure on community infrastructure and services
- Increase in social pathologies such as crime, safety, health, prostitution

The potential influence areas are:

- Neighbouring communities including Makushu, Musholombe and Pfumembe

5.2.1.1 Construction and Development Phase

Influx of jobseekers during the construction phase is expected to be high because this phase has higher level of job creation. This will remain the case throughout the construction and development phase (2 years). Some construction accommodation will be provided, but most opportunities will be prioritised for local, municipal and district area.

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Conflict between job seekers and local communities	Negative	Short Term	Local	Highly Probable	High	Medium to High	Medium	Medium to High	Low
Increase in social pathologies such as crime, safety, health, prostitution	Negative	Short Term	Local	Probable	High	Medium	Low to Medium	Medium	Low

5.2.1.2 Operational Phase

A lower influx of job seekers during the operational phase is anticipated.

Medium

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)

Impact on social characteristics and dynamics of rural areas	Negative	Long Term	District	Highly Probable	Medium	Low to Medium	Low to Medium	Low to Medium	Low to Medium
Conflict between job seekers and local communities	Negative	Long Term	Local	Highly Probable	High	Medium to High	Medium	Medium to High	Low to Medium
Pressure on community infrastructure and services	Negative	Long Term	District	Highly Probable	High	Medium to High	Medium to High	Medium	Low to Medium
Increase in social pathologies such as crime, safety, health, prostitution	Negative	Long Term	Local	Probable	Very High	Medium	Medium	Medium	Low to Medium

5.2.1.3 Decommissioning Phase

During the decommissioning flow it is not expected that further job seekers will migrate into the local area. No impact anticipated.

5.2.1.4 Cumulative Impacts

Due to the proximity of the planned Makhado Colliery and potential future development of the Generaal Project, it is anticipated that influx will be amplified within the Makushu and Mosholombe communities that may have secondary impacts on infrastructure, services and housing.

5.2.1.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Development and Implementation of an Influx and Land use Management Plan in collaboration with the local communities
- Priority employment from local communities with the development of recruitment procedures and utilizing the existing skills available from the local communities
- Establishing early on skills development programmes in areas where most employment opportunities will be available such as operators and artisans
- Implementation of bursary programme and practical skills programmes as part of the Social and Labour Plan
- Establishment of a local labour recruitment committee to monitor recruitment procedures and results

- Engage with Traditional Authority to manage and monitor site allocation to job seekers and/or employees in the local communities
- Induction of contractors and workforce with regard to their code of conduct in the local communities

5.2.1.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Influx Management Plan	Influx Monitoring Programme
Land use Management Plan	

5.2.2 Change/disruption of power relationships

The balance of power relationships within rural and traditional communities are sensitive and easily disrupted by external change. The following power relationships are considered:

- Provincial / Local Government and Traditional Leadership
- Traditional Authority and community headman / subjects
- Internally between different Community leaders / drivers
- Within communities between those benefitting and those who do not benefit
- Amongst neighbouring communities within the same Traditional Area

Power relationships are mostly based on the following:

- Demographic, Health and Educational differences
- Economic differences (Access to employment opportunities, business opportunities and economic growth)
- Access to land and natural resources
- Cultural differences

Mining activities often involve social tension within affected communities. There can be differences of opinion within a community about a whole range of issues. While some welcome a new mine, others may oppose it. While some are satisfied with compensation packages on offer, others will wish for more. While some are reluctant to tolerate any change, others will eagerly embrace new business opportunities.

Additional to these social tensions, the influx of outsiders may further impact on existing social networks. This could be due to the presence of outsiders in communities with a high degree of homogeneity and cohesion: the introduction by outsiders of other social practices, such as increase in shebeens, gangsterism, and

prostitution: changes in the social ethos of the community due to the presence of outsiders: competition for scarce resources and employment opportunities.

The various potential impacts include:

- Increased internal inequalities within communities between those who benefit directly from the mine and those who do not
- Competition for power of direction and decision-making between Community Leaders
- Competition for power over benefit allocation amongst communities and with neighbouring communities
- Tension and conflict between residents and outsiders
- Loss of subjects if a household chooses to relocate outside the Traditional Authority jurisdiction

The potential influence areas are:

- Neighbouring communities including Makushu, Mosholombe and Pfumembe
- Mphephu Traditional Authority area
- Makhado Municipal Region

5.2.2.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.2.2.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increased internal inequalities within communities	Negative	Long	Local	Probable	Medium	Medium to High	Medium	Low to Medium	Low to Medium
Competition for power of direction and decision-making between community leaders	Negative	Medium Term	Local	Definite	High	High	Medium to High	Low to Medium	Medium
Competition for power over benefit allocation amongst communities	Negative	Short Term	District	Definite	High	High	Medium to High	Low to Medium	Medium

and with neighbouring communities									
Tension and conflict between residents and outsiders	Negative	Medium Term	Local	Highly Probable	Medium	Medium to High	Medium	Medium	Low to Medium
Loss of traditional authority subjects if a household chooses to relocate outside the traditional authority jurisdiction	Negative	Permanent	Local	Highly Probable	Medium	Medium to High	Medium	Medium to High	Low to Medium

5.2.2.3 Decommissioning Phase

During the decommissioning flow it is not expected that further social tension will be evident in the local area. No impact anticipated.

5.2.2.4 Cumulative Impacts

Due to the proximity of the planned Makhado Colliery and potential future development of the Generaal Project, it is anticipated that an increase in in power disruption between structures may take place. This however is very much dependent on the timing of the other developments, and this impact will be significant only if development of these projects takes place at the same time.

5.2.2.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Broad based engagement and participation in the process and activities that will influence local communities
- Equal distribution of benefits amongst affected communities
- Consistent application of compensation rates to all Project Affected Households/Persons
- Internal capacitation of staff / resources utilised to engage and operate in the area (Internal Induction
- External capacitation of community leadership structures to empower existing structures on the consequences and benefits of mining development, pre-construction and throughout operations
- Preference to relocation host options within the same villages and traditional authority areas

5.2.2.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme

MANAGEMENT PLAN	MONITORING PLAN
Resettlement, Compensation and Mitigation Strategy	Resettlement, Compensation and Mitigation Monitoring Programme

5.2.3 Disruption in daily living and movement patterns

In terms of impacts on daily movement patterns, the main access road to the area (D3672) will need to be deviated as they will be impacted by mine infrastructure.

Change processes would result from construction vehicles accessing, crossing and using roads during construction of the proposed project. The disruption of daily movement patterns (the impact) on the road mentioned, as a result of change processes associated with construction, would obtain in the case of: (1) the general population, e.g. individuals on their way to work; parents taking children to school; children walking to school; or people on their way to local towns and beyond; (2) tourists visiting/traversing the area; and (3) businesses taking their products to market or farmers going about their farming activities (intra-farm movement). Impacts would present differentially for these groups, ranging potentially from a mere nuisance factor giving rise to frustration, to more serious ramifications where activities are impeded.

The various impacts affecting daily living and movement patterns are:

- Increase in traffic numbers caused by supplying of goods during construction and operational phases
- Increase traffic numbers caused by transport and/or traffic of employees from their place of residence to their place of work.
- Road diversion causing further distances to travel
- Access from communities to schools outside the neighbouring villages due to road diversion
- Access to clinics located in Mudimeli, Straigher, Biaba and Makhado due to road diversion
- Access and alternative access during incidents by Emergency Health Services

The potential influence areas are:

- Makushu, Mosholombe and Pfumembe
- To a lesser extent Mudimeli and Ngundu

5.2.3.1 Construction and Development Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in traffic numbers caused by supplying of goods during construction phase	Negative	Temporary	Local	Highly Probable	High	Medium to High	Medium	Low to Medium	Low to Medium

Most of the impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.2.3.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in traffic numbers caused by supplying of goods during operational phase	Negative	Long Term	Local	Highly Probable	High	Medium to High	Medium	Medium	Low to Medium
Increase traffic numbers caused by transport and/or traffic of employees from their place of residence to their place of work	Negative	Long Term	Local	Highly Probable	Medium	Medium	Low to Medium	Medium to High	Low
Road diversion causing further distances to travel	Negative	Permanent	Local	Definite	Very High	High	High	Low to	Medium to High
Access from communities to schools in neighbouring communities due to road diversion	Negative	Permanent	Local	Definite	Very High	High	High	Medium	Medium
Access to clinics located outside the area due to road diversion	Negative	Permanent	Local	Definite	Very High	High	High	Low to Medium	Medium to High
Access and alternative	Ne	Lo	Lo	Hig	Hig	Me	Me d	Me	Lo w

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
access during incidents by emergency health services									

5.2.3.3 Decommissioning Phase

Decommissioning of the proposed project is expected to impact daily movement patterns in the same manner but to a lesser extent. The same mitigation measures should be applied.

5.2.3.4 Cumulative Impacts

Existing limited road access into the area will be further impacted if more development is initiated that will utilise the same roads. The Makhado Project will utilise the same road, although not the same section, and therefore if the developments take place at the same time it will intensify the impact.

5.2.3.5 Mitigation

The following mitigation measures are proposed to mitigate the impact and the Human Right Risk:

- Deviation of public road around the mine development rather than cutting through the infrastructure areas.
- Traffic minimized through bus and combi services to transport workers to the project site
- Low speed limits on access roads with public drop-off / pick-up areas as to not disrupt the flow of traffic
- Road crossings should be managed by signing and traffic management measures
- Issues and Grievance Procedure available to local people to report bad driving or rules traversing
- Alternative methods for school children mode of transport to schools must be explored, i.e. issue of bicycles to school children or contracting school busses
- Engagement with Department of Health to arrange regular (weekly) Mobile Clinic services in communities
- Engagement with Medical Emergency Service to ensure access to communities

MANAGEMENT AND MONITORING PLAN

MANAGEMENT PLAN	MONITORING PLAN
Traffic Safety and Awareness Plan	Traffic Safety and Awareness Monitoring Plan
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.2.4 Dissimilarity in Social Practices and Disruption of Social Networks

This impact relates to the social interaction of household members with other people in the community. A huge portion of the community is very poor and there is a high unemployment rate. An influx of people with disposable income might lead to an increase in prostitution, which can impact on the HIV, STD's and unwanted pregnancy rate in the area. There can be a number of secondary impacts like alcohol abuse and disintegration of families.

Interference by construction workers/job seekers from elsewhere in local social networks can be considered a change process associated with the proposed project development and operational process. Impacts will result if:

- locals perceive this interference as adversely affecting the manner which they go about servicing their social networks, including how they relate to each other socially or in pursuit of religious and cultural practices / seek to fulfil their instrumental and/or emotional social support related needs; and
- such interference and perceived impacts result in frustration or angel as well as potential conflict with newcomers.

I present, the above impacts would adversely affect the creation of social capital (a crucial ingredient in producing safe, happy, and productive communities), bearing in mind that social capital derives from a person's membership of groups and institutions and social networks, including religious participation with others.

The above interference and resulting impacts manifesting would depend on a number of factors, including whether newcomers:

- at foreigners or S.A. national from elsewhere. As noted previously, research shows thatforeigners exist as discrete networks and don't readily assimilate into local communities. If this research is correct interference and impacts on social networks would therefore be more readily attributable to foreigners than S.A. nationals (newcomers) from elsewhere.
- will be able to secure employment or are already employed by the Duel Project or its contractor(s), thus being able to meet their primary needs, e.g. shelter and food, thus not needing to interfere in existing social networks with the objective to secure instrumental support;
- will be in the area only to secure employment at the proposed the Duel project (in the case of job-seekers) and leave if they are unsuccessful in doing so. (Construction workers who are part of a stable, permanent contractor workforce are expected to vacate the area following completion of the construction phase).

Bearing in mind the above uncertainties, but given the importance of social capital for community safety and stability and the role of social networks in this regard, the following impacts are identified:

- Tension and Conflict due to dissimilar social practices
- Disruption of social networks
- Increases if Developmental diseases
- Increase in Social Pathologies such as crime, prostitution, teenage pregnancies

The potential influence areas are:

- Neighbouring communities including Makushu, Mosholombe and to a lesser extent Pfumembe

5.2.4.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.2.4.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Tension and Conflict due to dissimilar social practices	Negative	Medium Term	Local	Probable	High	Medium to High	Medium	Medium	Low to Medium
Disruption of social networks	Negative	Long Term	Local	Highly Probable	High	High	Medium to High	Low to Medium	Medium
Increases in Developmental diseases	Negative	Long Term	Local	Probable	High	Medium to High	Medium	Medium to High	Low to Medium

Increase in Social Pathologies such as crime, prostitution, teenage pregnancies	Negative	Long Term	Local	Probable	High	Medium to High	Medium	Medium	Low to Medium

5.2.4.3 Decommissioning Phase

These impacts will not manifest differently in the Decommissioning phase as in the Operational Phase. The same mitigation measures should be applied.

5.2.4.4 Cumulative Impacts

If further developments take place in the vicinity of the Duel Project, the anticipated impacts will be intensified, should construction of these developments and the construction of the Duel Project occur concurrently.

5.2.4.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- In the case of the variable 'disruption of social networks', mitigation is anticipated to be difficult, but probably more achievable in terms of a stable workforce already employed by, or yet to be employed by the Subiflex appointed contractor(s). The contractor would be able to put in place certain rules and regulations with the objective to prevent interference in local social networks.

However, mitigation would fall outside the purview of the contractor(s) in the case of disruption of social networks by newcomers in search of employment at the Duel Project.

- Increased security on mine premises: Properly constructed and secured fences can control access to construction sites. Implementing strict access control of the project site and specifically the contractor's workforce camp.
- Construction and permanent workers are identified and marked with clear identifiable clothing
- Employment of local people on the mine to improve the poverty levels in the neighbouring communities
- Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.
- Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.
- Grievance Procedure within the local communities

- Subiflex to liaise with existing community policing forums and project security to properly secure the project area and surrounding area

5.2.4.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Health Strategy	Health Monitoring Programme in collaboration with Department of Health
Community Health Management Plan	Traffic Safety and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.2.5 Impact Equity

Impact equity is related to the fairness of the distribution of impacts across the community. It must be ensured that the people who will be impacted by the development must also share in the benefits of the development. The project will lead to gain on a regional and local level, and therefore local communities impacted the most will also be the project's primary beneficiaries. The conservation initiatives will however not benefit from the development but will be impacted upon.

The following impacts are identified:

- Unequal distribution of benefits between those who are primarily impacted and those who receive benefits
- Unequal access to opportunities or resources

The potential influence areas are:

- Neighbouring communities and conservation and tourism activities in the neighbouring areas

5.2.5.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.2.5.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Unequal distribution of benefits between those who are primarily impacted and those who receive benefits	Negative	Long Term	Local	Probable	Medium	Medium	Low to Medium	Medium to High	Low
Unequal access to opportunities or resources	Negative	Long Term	Local	Probable	Medium	Medium to High	Medium	Low to Medium	Low to Medium

5.2.5.3 Decommissioning Phase

These impacts will not continue into the Decommissioning phase.

5.2.5.4 Cumulative Impacts

If further developments take place in the vicinity of the Duel Project, the anticipated impacts will be intensified, should construction of these developments and the construction of the Duel Project occur concurrently.

5.2.5.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Employment should be prioritized to local communities
- Local beneficiation programmes to be implemented as part of the Social and Labour Plan
- Impacts on tourism and conservation activities are mostly related to noise, visual and air quality impacts – to be mitigated in terms of specialist recommendations

5.2.5.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.2.6 Perceptions of and Feelings in relation to the project

Feelings in relation to the project may result in the formation of interest groups. Proposed projects often generate uncertainty or fear and sometimes the impacts perceived in anticipation of the planned intervention

can be greater than the impacts that ultimately result from the intervention. These impacts include uncertainty, annoyance, dissatisfaction due to a failure of the project to deliver promised benefits, and an experience of outrage, for example where a project leads to violation of deeply belief systems or planned development programmes. The concerns raised on this project from a social perspective have been focused on visual impacts to neighbouring tourism facilities and activities and the disruption of future development of conservation programmes.

The following impacts are identified:

- Establishment of conflict between the developer and the local communities
- Objection against the development

The potential influence areas are:

- Interested Parties, Non-Governmental Organisations and Environmental Groups
- Local Conservation areas
- Neighbouring communities

5.2.6.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.2.6.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Establishment of conflict between the developer and the local communities	Negative	Medium Term	Local	Definite	Very High	High	Medium to High	Medium	Medium
Objection against the development	Negative	Long Term	International	Definite	Very High	High	High	Low to Medium	High

5.2.6.3 Decommissioning Phase

These impacts will not continue into the Decommissioning phase.

5.2.6.4 Cumulative Impacts

An increased resistance against mine development in the area already exist, additional mine development will further exacerbate the resistance and negative feelings regarding mine development

5.2.6.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Establish ongoing Consultative Forums with concerned groups to air concerns, find possible mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures
- Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures
- Collaboration for scheduling of mining projects, and determining benchmarks or standards not to be exceeded

5.2.6.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.3 Physical Capital

5.3.1 Resettlement or displacement of individuals or families

The development will have an impact on households that would need to be resettled. The zone of displacement has been determined utilising Geographical Information Systems where baseline Social Sensitive Receptors were identified overlain by impact assessment and level of risks to the communities. The displacement zone was determined as an area where impacts could not be satisfactorily mitigated, and therefore households would need to be resettled.

In consideration of the specialist studies, specifically noise and blasting that have the most potential to affect households, a determination was made that households within a 500m radius would need to be resettled. There are **223** stands and households within this radius with the following details:

Table 23: Stands potentially affected

TYPE OF STAND	NUMBER

Business Stands	6
Large Residential Stands	64
Medium Residential Stands	79
Small Residential Stands	72
Vacant Stands	2
Total Stands	**223**

The potential influence area is Makushu Community. A socio-economic baseline survey was conducted in the Makushu Community with the focus on the potentially affected households. The results of the survey are included in the baseline socio-economic environment's local community analysis.

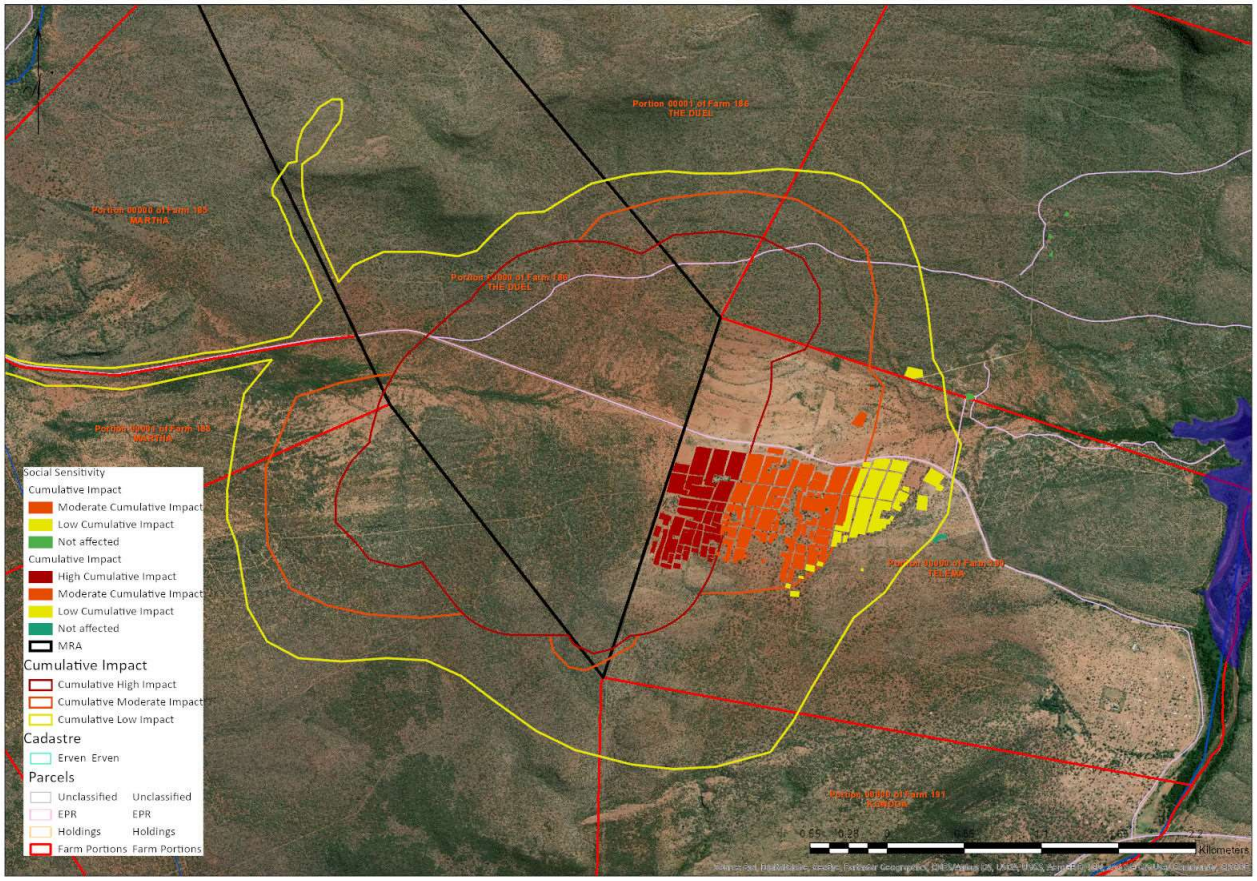

Figure 34: Displacement Map

5.3.1.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.3.1.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Displacement of households within the displacement zone	Negative	Permanent	Local	Highly Probable	Very High	High	High	Medium	Medium

5.3.1.3 Decommissioning Phase

These impacts will not continue into the Decommissioning phase.

5.3.1.4 Cumulative Impacts

No resettlement is anticipated for the Makhado Colliery in terms of their Social Impact Assessment, therefore no cumulative impacts are foreseen on these communities.

5.3.1.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Application of the Avoidance Principle by reducing the footprints of infrastructure where possible
- Reducing the Displacement Zone by mitigating noise, blasting and air quality impacts (as per the specialist reports)
- Resettlement of structures that cannot be avoided in terms of the resettlement strategy

5.3.1.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Resettlement, Compensation and Mitigation Strategy	Resettlement, Compensation and Mitigation Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme
Evacuation and Blast Management Plan	Blast Monitoring
	Noise Monitoring

MANAGEMENT PLAN	MONITORING PLAN
	Air quality Monitoring

5.3.2 Change in Community services

Potential impact on the surrounding communities due to an influx of job seekers on the existing services (i.e. water, electricity, sewerage services, road maintenance, and social services).

It is anticipated that during the construction phase the impact on neighbouring communities its services will be limited and the majority of influx of workers will be located on site. The construction site will be managing the pressures on infrastructure.

During the Operational phase, employees not from the local area will reside in nearby formal towns. Lower level workers will most probably reside in the host and neighbouring communities. The increase in families within these areas will require services, which may place an increase pressure.

During the Decommissioning phase, with the downscaling of operations, there may be a decrease in economic value / spending power in the local communities and neighbouring towns, this may have a secondary effect on the municipality's ability to maintain the services in these areas.

The following impacts are identified:

- Adequacy of services to sustain the increase demand
- Increased pressure on current services to accommodate growth
- Decrease in population growth and ability to sustain services post closure

The potential influence areas are:

- Neighbouring Formal towns
- Neighbouring communities

5.3.2.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.3.2.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Adequacy of services to sustain the increase demand	Negative	Medium Term	District	Probable	High	Medium to High	Low to Medium	Medium	Low to Medium
Increased pressure on current services to accommodate growth	Negative	Long Term	District	Highly Probable	High	Medium to High	Medium to High	Medium	Low to Medium

5.3.2.3 Decommissioning Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Decrease in population growth and ability to sustain services post closure	Negative	Long Term	District	Probable	High	Medium to High	Medium	Medium to High	Low to Medium

5.3.2.4 Cumulative Impacts

An increase in development projects in the region affecting similar geographical area can cause an increase in pressures on services. The participation in regional development planning forums may be able to foresee potential impacts and manage those appropriately.

5.3.2.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Establishment of a construction accommodation camp to house those employees that cannot be sourced from the local community due to a lack of skills
- Linkages with skills development programmes to optimize skills levels in local communities
- Source majority of the Level B construction employees from the local community
- Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years)

- Determine scale of assistance required at focal points and enter into an agreement with the municipality
- Participate in regional development planning forums of the municipality to continuously assess and monitor capacity, determine assistance required
- Downscaling and Retrenchment Plan in collaboration with local stakeholders to identify the scale of the impact at closure and required intervention
- Utilize the regional development planning forums of the municipality to determine closure strategies and its impact on services and infrastructure maintenance in the longer term

5.3.2.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme
	Services Capability Assessment in collaboration with Municipality every 5 years

5.3.3 Change in housing needs/demands

Influx of job seekers and workers for the development and associated economic activities will have a direct impact on the supply and demand of affordable housing. The ability of the local environment to supply housing to these job seekers and employees are influenced by various factors such as:

- Availability of land
- Township Planning
- Timeframe and Magnitude of demand

It is envisaged that most of the workforce during the construction phase would be sourced from the local community. Those not sourced from the local community will be housed at a facility on the mine premises. The number of people housed in this facility will however be kept to a minimum. Higher level employees will need to be housed within the local area.

Housing availability during the operational phase will largely depend on where the workforce is sourced from. It is anticipated that some employees would be housed in Louis Trichardt, Dzanani or Musina, but that lower level employees (Level B and low-C) not sourced from the local communities would find housing in neighbouring communities. This could have negative as well as positive impacts, as house rental provides a further income source in the local area.

During the Decommissioning phase, with downscaling, will have an impact on housing within the formal towns and rural villages. This could cause a decrease in property prices and appetite for investment.

The impacts include:

- Increased pressure on formal towns to supply housing
- Increased property prices due to high demand in formal towns
- Increase occurrence of informal housing in the local communities
- Increased informal rental income as a source of income within formal and informal / rural towns
- Decrease of property prices within formal towns post closure
- Economic hardship due to the loss of rental income as a source of income within formal and informal / rural towns, post closure
- Surplus housing supply as people migrate out of formal towns, post closure

Housing availability differs within the various susceptible / influence areas of the development. The social change process influence areas:

- Neighbouring communities
- Formal towns, i.e. Louis Trichardt, Dzanani, and Musina

5.3.3.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.3.3.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increased pressure on formal towns to supply housing	Negative	Long Term	District	Highly Probable	High	Medium to High	Medium to High	Medium	Low to Medium
Increased property prices due to high demand in formal towns	Positive	Medium Term	District	Probable	Medium	Medium to High	Medium	N/A	Medium

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase occurrence of informal housing in the local communities	Negative	Medium	Local	Highly	High	Medium to High	Medium	Medium	Low to Medium
Increased informal rental income as a source of income within formal and informal / rural towns	Positive	Medium Term	Local	Highly Probable	High	Medium to High	Medium	N/A	Medium

5.3.3.3 Decommissioning Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Decrease of property prices within formal towns post closure	Negative	Short Term	District	Probable	Medium	Medium to High	Low to Medium	Medium	Low
Economic hardship due to the loss of rental income as a source of income within formal and informal / rural towns, post closure	Negative	Permanent	Local	Probable	High	Medium to High	Medium	Medium to High	Low to Medium
Surplus housing supply as people migrate out of formal towns, post closure	Negative	Short Term	District	Probable	Medium	Medium	Low to Medium	Medium	Low

5.3.3.4 Cumulative Impacts

An increase in development projects in the region affecting similar geographical area can cause an increase in pressures on the availability of housing. The participation in regional development planning forums may be able to foresee potential impacts and manage those appropriately.

5.3.3.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Linkages with skills development programmes to optimize skills levels in local communities
- Source majority of the Level B construction employees from the local community
- Provision of construction accommodation on site
- Discussions, agreements and procedures within the host and neighbouring communities to manage site / stand allocation to new residents / parties and village development plans within the villages to limit informal / squatting
- Monthly engagement with Traditional Authorities to manage and monitor influx and housing / site allocations
- Facilitation of housing development for external workforce
- Link-up with planned housing developments and private developers to unlock possible development to supply the projected demand
- Subsidy programmes to employees to access housing
- Participate in Regional Structures to plan for anticipated impacts, starting during the
- Construction Phase to ensure planning is done in advance
- Establish a future forum with representation from the workforce and municipality to discuss potential difficulties and solutions
- Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment
- Portable skill programmes to equip workforce to enter other economic sectors

5.3.3.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Management Plan
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.3.4 Change in access to resources that sustain livelihoods

The project area is currently primarily utilised for subsistence farming with a focus on livestock farming. Neighbouring areas are focused on conservation, hunting and agricultural land uses. The development of the proposed project is perceived by adjacent landowners to impact on the sustainability of the current land uses in the study area. Subsistence farmers are also concerned about the availability of grazing land.

The various impacts affecting daily living and movement patterns are:

- Loss of grazing land

- Loss of arable land if resettled
- Loss of vegetable gardens if resettled
- Loss of access to medicinal plants if resettled

The potential influence areas are:

- Makushu
- Neighbouring properties

5.3.4.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.3.4.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Loss of grazing land	Negative	Permanent	Site specific	Definite	Very High	High	High	Low to Medium	Medium to High
Loss of arable land	Negative	Permanent	Site specific	Definite	High	High	Medium to High	Medium	Medium
Loss of vegetable gardens	Negative	Permanent	Site specific	Definite	Very High	High	High	Medium to High	Low to Medium
Loss of access to medicinal plants	Negative	Permanent	Site specific	Highly Probable	Very High	High	Medium to High	Medium to High	Low to Medium
Loss of access to firewood	Negative	Permanent	Site	Highly	High	Medium to High	Medium	Medium	Low to Medium

5.3.4.3 Decommissioning Phase

During the decommissioning flow it is not expected that further impacts will occur.

5.3.4.4 Cumulative Impacts

An increase in development projects in the region affecting the same communities can cause an increase strain on livelihoods due to the limited available agricultural land is the area.

5.3.4.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Demarcated areas where fire wood can be collected that was cleared for the Construction Phase
- Establishment of medicinal plant nursery
- Provision of alternative grazing land
- Leasing of community land impacted by mining
- Monitoring the impact on livestock
- Fair compensation negotiated and agreed with households that will lose access to agricultural land or vegetable gardens
- Continuous consultation with Conservation bodies discussing co-existence and mitigation measures
- Implement a consultation programme with regional stakeholders in the development of a closure plan and rehabilitation programme
- Determine the regional needs and characteristics to ensure post mining use of land enhances the regional characteristics

5.3.4.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Resettlement, Compensation and Mitigation Strategy	Resettlement, Compensation and Mitigation Monitoring Programme

5.4 Human Capital

5.4.1 Participation of Local Communities in Employment Opportunities and Skills Development

The socio-economic environment within which the Duel Project will be implemented has indicated high levels of unemployment. However, as is the case in many areas within the Province, the supply of labour outnumbers the potential job opportunities by far. In the development a number of job opportunities will be

available. It is proposed that a maximum number of opportunities are provided locally, keeping in mind the skill levels available. In communities with high levels of unemployment there is immense competition amongst each other for job opportunities, and therefore, the presence of outsiders, could cause conflict. Employing locally would add the benefit of obviating the need for additional housing for workers.

Apart from the direct employment opportunities that will be created due to the construction of the Duel Project, a number of indirect jobs and business opportunities will also be created in the construction and operational phase. This impact has been quantified in the economic study.

The impacts include:

- Increase in available employment opportunities locally
- Availability of appropriately qualified workers
- Increase in skills development programmes and therefore skill levels of the local communities
- Employment of skilled outsiders creates tension and conflict in the local communities
- Loss of job opportunities due to downscaling of the mine employment

The potential influence areas are:

- Host and Neighbouring communities
- Region and Province

5.4.1.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.4.1.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in available employment opportunities locally	Positive	Long Term	Provincial	Definite	High	Medium to High	Medium to High	N/A	Medium to High
Availability of appropriately qualified workers	Negative	Short	Local	Probable	High	Medium to High	Medium	Medium to High	Low

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in skills development programmes and therefore skill levels of the local communities	Positive	Long Term	Local	Highly Probable	High	Medium to High	Medium	N/A	Medium
Employment of skilled outsiders creates tension and conflict in the local communities	Negative	Medium Term	Local	Probable	Medium	Medium to High	Medium	Medium	Low to Medium

5.4.1.3 Decommissioning Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Loss of job opportunities due to downscaling of the mine employment	Negative	Permanent	Local	Probable	Medium	Medium	Low to Medium	Medium to High	Low

5.4.1.4 Cumulative Impacts

If further developments take place in the vicinity of the Duel Project, the anticipated impacts will be intensified, causing an increase in skill levels and well as employment. The secondary effect is more disposable income which will lead to a higher standard of living in communities surrounding these developments.

5.4.1.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Source the maximum number of employees from the local area for temporary job opportunities
- Implement skills development programmes in the areas where most job opportunities will be created, i.e. operators and drivers
- Make available bursary opportunities to build skill capital in the region
- Establish a database of local people with information on qualifications and skills, utilize this database to develop skills plans and recruit local people.
- Implement portable skills development programmes

- Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods
- Establish a future forum with representation from the workforce to discuss potential difficulties and solutions
- Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment

5.4.1.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Employment Strategy	Employment Monitoring and Feedback Programme
Social and Labour Plan	Social and Labour Plan Annual Audit
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.4.2 Participation of local business in procurement opportunities

Subiflex has committed that local communities will be provided with opportunities and capacity to participate in contracts that would become available during construction and operational phase of the Duel project.

The impacts will include:

- Empowerment of local business through procurement and capacity building
- Increased tension and conflict between business in competition for contracts
- Loss of business opportunities during downscaling causing economic hardship and retrenchment

The potential influence areas are:

- Neighbouring communities
- Land Claimants

5.4.2.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.4.2.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Empowerment of local business through procurement and capacity building	Positive	Long Term	Regional	Highly Probable	High	Medium to High	Medium to High	N/A	Medium to High
Increased tension and conflict between business in competition for contracts	Negative	Medium Term	District	Probable	Medium	Medium	Low to Medium	Medium	Low to Medium

5.4.2.3 Decommissioning Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Loss of business opportunities during downscaling causing economic hardship and retrenchment	Negative	Medium Term	Local	Probable	Medium	Medium	Low to Medium	Medium	Low

5.4.2.4 Cumulative Impacts

Establishment of a regional business pool that can serve various mine developments will stimulate longer sustainability for the Small Business Environment.

5.4.2.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Establish a database of local businesses, utilize this database to establish partnerships between local and larger service providers as well as locally preferred work packages
- Consultation and Feedback on results on a regular basis
- Implementation of capacity building programmes to minimize and mitigate the impact of mine downscaling and closure.
- Closure plan implementation

5.4.2.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Procurement Policy	Local Procurement Monitoring
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme
Social and Labour Plan	Social and Labour Plan Annual Audit

5.4.3 Health Impacts

Health aspects are included from a social perspective and are expressed in nonmedical terminology. It is foreseen that the construction of the Duel project will impact on individual's perceived health. This impact rating relates to exposure to diseases caused by a change in the social environment. The following increases in health related illnesses may occur:

- Sexually transmitted infections (STIs)
- HIV/AIDS
- Tuberculosis
- Asthma and Bronchitis

The following impacts are identified:

- Increase in health incidents related to air pollution
- Increases of Developmental diseases

The potential influence areas are:

- Neighbouring communities Makushu and Mosholombe

5.4.3.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.4.3.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in health incidents related to air pollution	Negative	Long Term	Local	Probable	High	Medium to High	Medium	Medium to High	Low to Medium
Increase in Developmental diseases	Negative	Long Term	Local	Probable	High	Medium to High	Medium	Medium to High	Low to Medium

5.4.3.3 Decommissioning Phase

These impacts will not manifest differently in the Decommissioning phase as in the Operational Phase. The same mitigation measures should be applied.

5.4.3.4 Cumulative Impacts

If further developments take place in the vicinity of the Duel Project, the anticipated impacts will be intensified, should construction of these developments and the construction of the Duel Project occur concurrently.

5.4.3.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Mitigation measures to minimize air quality include:
  - Wet suppression
  - Wind speed reduction
  - Chemical stabilisation
- Air quality and health monitoring systems to be implemented
- Communication Strategy to keep community informed of air quality risks and mitigation measures
- Health awareness programme with workers and communities to educate on sexually transmitted diseases and HIV/AIDS and other illnesses such as TB and Malaria
- Provision of preventative measures (including condoms)
- Collaboration with local health practitioners at local clinics, health committees and home-based care organisations

5.4.3.6 Management And Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN

Air quality Management Plan	Air quality monitoring
Health Strategy	Health Monitoring Programme in collaboration with Department of Health
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme
Engagement and collaboration with Department of Health on management of increased diseases	

5.4.4 Safety impacts: Increase in Crime

A central change processes associated with the construction and development process of a development such as the Duel Project is the presence of contracting firms and construction workers, usually accommodated in workforce accommodation camps. This may include workers as well as opportunists and burglars/robbers posing as construction workers. The bigger the project, the more opportunity, the more people involved, could result in a crime increase.

The development may open new areas at risk of poaching and theft of game/livestock.

Poaching is the illegal taking of wild plants or animals contrary to local and international conservation and wildlife management laws. Violations of hunting laws and regulations are normally punishable by law and, collectively, such violations are known as poaching. Poaching is in effect the illegal "hunting" of fauna and flora. Poaching can generally be divided into three different classes.

- Subsistence
- Commercial
- Syndicated

All poaching levels are as equally critical, as they are often interlinked and intelligence passes through all three levels. This is further worsened by the lack of police capacity to assist in managing and/or mitigating the situation.

Other crimes linked with large and/or mining development include:

- Local sex workers and prostitution
- Substance (drugs, alcohol) abuse
- Opportunistic theft
- Vandalism
- Burglary and/or armed robbery

The various potential impacts include:

- Increase in social pathologies such as alcohol abuse, prostitution and vandalism
- Increase in theft, burglary, armed robbery, assault and even murder
- Increase in poaching in the neighbouring conservation areas

The potential influence areas are:

- Neighbouring communities
- Game Reserves / Hunting Farms in the vicinity of the Duel Project
- Musekwa Nature Reserve and Kuduland Conservancy

5.4.4.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.4.4.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase in social pathologies such as alcohol abuse, prostitution and vandalism	Negative	Long Term	Local	Probable	High	Medium to High	Medium	Medium	Low to Medium
Increase in theft, burglary, armed robbery, assault and even murder	Negative	Medium Term	Local	Probable	High	Medium to High	Medium	Medium	Low to Medium
Increase in poaching in the neighbouring conservation areas	Negative	Short Term	Local	Probable	Very High	High	Medium to High	Low to Medium	Medium

5.4.4.3 Decommissioning Phase

The decommissioning of the Duel Project, will most probably entail the retrenchment of current workers at that time, this may cause an increase number of unemployed desperate people residing in the host and neighbouring communities, which could have an increase in crime related activities. These impacts will not

manifest differently in the Decommissioning phase as in the Operational Phase. The same mitigation measures should be applied.

5.4.4.4 Cumulative Impacts

An increase in development projects in the region affecting similar geographical areas can cause an increase in poaching in Game Farms and Conservation areas

5.4.4.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Cooperation, Participation and support to the anti-poaching initiatives in the area.
- Increased security measures (fencing, access control and monitoring) on mine premises.
- Properly constructed and secured fences can control access to mine sites. Implementing strict access control of the project site and specifically the contractor's workforce camp. Curfew times to be established in accommodation areas. Construction workers accommodated on mine are identified and marked with clear identifiable clothing
- Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate.
- Workers to be screened including criminal background checks.
- Employment of local people on the mine to improve the poverty levels in the host and neighbouring communities
- Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take.
- Subiflex to participate and support existing community policing forums and project security to properly secure the project area and surrounding area
- Implement downscaling and retrenchment strategies
- Implement portable skills development programmes
- Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods

5.4.4.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Management Plan
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

MANAGEMENT PLAN	MONITORING PLAN
Social and Labour Plan	Social and Labour Plan Audit Reports
	Crime statistics monitoring in collaboration with SAPS
	Statistics on Poaching, comparisons with past 24 months

5.4.5 Safety impacts: Infrastructure & Operational safety

Aspects of the development may pose a risk such as traffic accidents, mine accidents, fire hazards and other emergency incidents. Unless these risks are addressed, the surrounding communities and land owners may feel that their safety and that of their property is at risk and that their risk exposure may increase.

The following impacts are identified:

- Increased road accidents due to increased traffic volumes
- Increased Fire risks surrounding the mine site

The potential influence areas are:

- Neighbouring communities
- Surrounding properties

5.4.5.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.4.5.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increased road accidents due to increased traffic volumes	Negative	Long Term	Local	Highly Probable	High	High	Medium to High	Medium to High	Low to Medium
Increased Fire risks surrounding the mine site	Negative	Long Term	Local	Probable	Very High	Medium to High	Medium	Medium to High	Low to Medium

5.4.5.3 Decommissioning Phase

Limited to low further risks are anticipated during the decommissioning phase.

5.4.5.4 Cumulative Impacts

If further developments take place in the vicinity of the Duel Project, the anticipated impacts will be intensified.

5.4.5.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Conduct regular full risk assessment and have procedures in place to deal with emergency incidents
- Make available a complaint and grievance mechanism where people can lodge any complaint or raise issues regarding damages to their property due to risk and safety exposure
- Involve local emergency services to support on mine emergency procedures
- Establish on site emergency equipment and appoint safety staff

5.4.5.6 Management And Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Traffic Safety and Awareness Plan	Traffic Safety and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme
Emergency Incident Management Plan	Road safety statistics and Incident reporting

5.5 Natural Impacts

5.5.1 Change in sense of place

Social impacts experienced in the physical environment relates to exposure to dust, noise, risk, odour, vibration, artificial light etc. It is anticipated that there will be a decrease in the quality of the physical environment. Noise levels and traffic in and around the affected communities will increase as result of the mining activities. The extent, magnitude and impact on the physical environment and the nuisances this will create are addressed in various other specialist studies.

Sense of place is an important consideration before any development, since sprawl development tends to eliminate unique features of the landscape. The notion that places are more than just locations is at the core of ideas about place and sense of place. In its simplest form, sense of place encompasses the idea that each

person forms close relationships with the spaces and settings in which he or she interacts. As they work, play, spend time with their families and friends, travel in their neighbourhoods and immediate environments individuals have positive and negative experiences in, and of, places and as a result ascribe meaning to them (Buttimer, 1980; Damer, 1974; Lewis, 1979; Meinig, 1979; Perkins, 1988a, 1988b, 1989; Perkins, Thorns and Newton, 2008; Relph, 1976).

This ascription of meaning is known as place-making (Tuan, 1974; Jackson,1994) and the senses of place that arise from it are associated with memories, moving events and the establishment of "individual identity, security and concern" (Pred, 1983: 49). Much research has focused on the ways sense of place relates to the shared positive experience of the defining landscape characteristics of place. These characteristics are easily recognised as peculiar to a place and which are the object of general affection" (Wild, 1963 in Tuan, 1975). Landscape elements that may be of significance in one place or time may not make a contribution to sense of place in another. Sense of place may also be changed or undermined by practices which erode positive experiences of landscape, limit access, or in some other way make the meaning of settings ambiguous.

Translation of the theory of sense of place to the Fuleni Anthracite Project suggests several dimensions that are pertinent to this assessment.

- Multiple Meanings: There is no single sense of a place. The meaning of the site will be different for each individual and vary among communities of interest, influenced by past and present experiences and current perspectives. This helps explain the multiple 'claims' over the project area (e.g., rural community, hunting experience, ecotourism experience).
- Changes over Time: Sense of place is not static. Just as the project area has recently developed new meaning due to its commercial and mining value, new site values will emerge in future years. The implication is that the area's future place-meaning and its relationship to the project area can be planned and opportunities for future lands uses and activities protected.
- Elements of Place Making: Sense of place arises from both tangible and intangible elements of a site. Much of the natural value of the project area is symbolic and intangible. Visual connections between the project area and geographic features are further tangible 'senses' of the area, although at present key visual connections are interrupted by physical barriers. Both types of element are important. Intangible elements present greater challenges to impact assessment and management. One option is to insert physical barrier representations (such as the photo simulations done as part of the visual assessment); another is to depict the intangible values in other ways (such as audio-visual displays).
- Positive and Negative Sense of Place: Sense of place may be either positive or negative – or may comprise, at the same time, both positive and negative aspects. Current experience of the site includes positive aspects as well as negative aspects associated with various aspects such as security, crime, droughts, etc. Influences upon sense of place similarly may promote or detract from desirable

experiences. Using the example of sound, music may help create a positive sense of place, while traffic noise may intrude.

- Sense of Place can be Constructed: It is possible to construct a sense of place; although these attempts may be resisted by some individuals and groups. Sense of place is commonly created through processes of place promotion in a wide variety of commercial and public settings. Memorialising is a good example of the latter and the addition of the conservation and protection areas can enhance sense of place in specific identified areas.
- Different Scales: Individuals and communities may perceive a connection between a place and themselves at various scales – local, regional, national and international. In the context of this the project area fits within a national and international network with international and national hunters and tourists particularly interested in the game farming and hunting experiences available. In this context the site has a strong global sense of place as well as being important nationally, regionally and locally.
- Sense of Place Characteristics: Sense of place has a number of characteristics, namely (James, 2001): It is difficult to quantify and it is abstract.
  - It is comprised of natural features, patterns of human settlement and social relationships.
  - It is determined by local knowledge.
  - It is embodied in folklore, personal narrative and amateur history.

Putting up unnatural structures in a natural area will impact on the sense of place. Vistas will be broken and the rural feeling will get lost. The tourism potential of the area must also be taken in consideration, as it strongly relates to the sense of place. Most tourism initiatives are based on the remoteness and uniqueness of the area. An influx of new comers and loss of local culture as result will add to the loss of sense of place, as the cultural uniqueness is another attraction to the area.

The impact is mentioned in the social impact assessment report as a linkage to the other specialist reports and mainly caused by:

- Increase nuisance effect due to increased levels of dust and noise
- Increase in traffic with a disruptive effect
- Visual intrusion of mining infrastructure
- Decrease in Sense of Place in the Wilderness Area located in proximity to the mine area

The potential influence areas are:

- Neighbouring Conservation Initiative
- Neighbouring communities

5.5.1.1 Construction and Development Phase

The impacts indicated below in the Operational Phase will commence during the Construction Phase and continue into the Operational Phase and are therefore discussed under the Operational Phase impacts.

5.5.1.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Increase nuisance effect due to increased levels of dust and noise	Negative	Long Term	Local	Definite	Very High	High	High	Medium	Medium
Increase in traffic with a disruptive effect	Negative	Medium Term	Local	Probable	Medium	Medium to High	Medium	Medium	Low to Medium
Visual intrusion of mining infrastructure	Negative	Long Term	Local	Definite	Very High	High	High	Medium	Medium
Decrease in Sense of Place in the Region	Negative	Medium Term	Local	Probable	Medium	Medium to High	Medium	Medium	Low to Medium

5.5.1.3 Decommissioning Phase

These impacts will not manifest differently in the Decommissioning phase as in the Operational Phase. The same mitigation measures should be applied.

5.5.1.4 Cumulative Impacts

An increase in development projects in the region affecting similar geographical area can cause an increase in the intrusion to sense of place. In the event of increased development in the region, the aesthetic environment will be further impacted, this may render other land use activities that rely on the aesthetic environment non-viable.

5.5.1.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Ensure noise levels post mitigation at night is below 40 dB
- Ensure noise levels post mitigation during the day is below 50dB
- If the noise levels cannot be mitigated below these levels, an assessment of the housing within the community that may be impacted must be conducted.
- Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures
- Establish ongoing Consultative Forums with concerned groups to air concerns, refine mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures
- Implementation of traffic management measures
- Implementation of insulation and mitigation measures for noise
- Implementation of visual barriers and other mitigation measures as recommended in the visual study
- Implementation of particle and dust suppression methods
- Colour schemes must complement the local environment.
- Minimising disturbance to vegetated areas outside the critical development areas where possible
- Revegetation/rehabilitation of disturbed sites in parallel with development
- Rehabilitation and Reclamation of affected areas

5.5.1.6 Management and Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.5.2 Change in Ecotourism opportunities

The development in a different economic sector (mining) than the current prevalent activities and land uses in the area may have an impact on the residents and tourists coming to the area. This impact could be caused as a secondary impact to the loss of sense of place (dealt with under Change of Sense of Place above). The quantification of this impact's economic consequences is dealt with in the economic study.

During the construction phase, the disruption of daily movement patterns and the change of the sense of place will have a temporary impact on visitors and tourists to the area.

During the operational phase, it is expected that there may be a long term decrease in tourists and visitors. The proposed project is expected to play an important role in the economic growth of the area. This growth however will most probably not build on the existing tourism orientated characteristics of the neighbouring area. Whilst potentially being a negative impact, it is anticipated that there would be more demographic diversity among visitors.

The following impacts are identified:

- Decrease in tourists and visitors during the Construction Phase
- Decrease in tourists and visitors during the Operational Phase

The potential influence areas are:

- Neighbouring Conservation Initiatives
- Neighbouring communities

5.5.2.1 Construction And Development Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Decrease in tourists and visitors during the Construction Phase	Negative	Short Term	Local	Highly Probable	High	Medium to High	Medium	Medium	Low to Medium

5.5.2.2 Operational Phase

IMPACT EVALUATION

POTENTIAL IMPACT	NATURE OF IMPACT	DURATION	EXTENT	PROBABILITY	INTENSITY	WEIGHTING FACTOR	IMPACT SIGNIFICANCE (WOM)	MITIGATION EFFICIENCY	IMPACT SIGNIFICANCE (WM)
Decrease in tourists and visitors during the Operational Phase	Negative	Long Term	District	Highly	Very High	High	High	Medium	Medium

5.5.2.3 Decommissioning Phase

These impacts will not manifest differently in the Decommissioning phase as in the Operational Phase. The same mitigation measures should be applied.

5.5.2.4 Cumulative Impacts

If additional development initiatives in the area in the mining sector, may have a cumulative impact that will adversely affect the tourism industry as whole in the area. Regional development planning with a focus on determining sensitivities and priority areas for development versus no development should be developed in partnership with government and local stakeholders and promulgated.

5.5.2.5 Mitigation

The following mitigation measures are proposed to mitigate the impact:

- Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures
- Establish ongoing Consultative Forums with concerned groups to air concerns, refine mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures
- Attempt to minimize impacts on tourism through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects
- Reduction of noise and visual impacts by the implementation of various mitigation measures such as visual barriers and noise insulators
- Collaborate with local stakeholders in terms of regional planning to ensure certain areas are protected for tourism and hunting activities.
- Minimising disturbance to vegetated areas outside the critical development areas where possible
- Revegetation/rehabilitation of disturbed sites in parallel with development
- Rehabilitation and Reclamation of affected areas
- Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)

5.5.2.6 Management And Monitoring Plan

MANAGEMENT PLAN	MONITORING PLAN
Communication, Consultation and Awareness Management Plan	Communication, Consultation and Awareness Monitoring Programme
Issues and Grievance Management Plan	Issues and Grievance Monitoring Programme

5.6 Social Impact Assessment Summary

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
Social Capital				
Population and Demographic Change	Conflict between job seekers and local communities	Medium	▪ Development and Implementation of an Influx and Land use Management ▪ Plan in collaboration with the local communities ▪ Priority employment from local communities with the development of recruitment procedures and utilizing the existing skills available from the local communities ▪ Establishing early on skills development programmes in areas where most employment opportunities will be available such as operators and artisans ▪ Implementation of bursary programme and practical skills programmes as part of the Social and Labour Plan ▪ Establishment of a local labour recruitment committee to monitor ▪ recruitment procedures and results ▪ Engage with Traditional Authority to manage and monitor site allocation to ▪ job seekers and/or employees in the local communities ▪ Induction of contractors and workforce with regard to their code of conduct in the local communities	Low
	Increase in social pathologies such as crime, safety, health, prostitution	Low to Medium		Low
	Impact on social characteristics and dynamics of rural areas	Low to Medium		Low to Medium
	Conflict between job seekers and local communities	Medium		Low to Medium
	Pressure on community infrastructure and services	Medium to High		Low to Medium
	Increase in social pathologies such as crime, safety, health, prostitution	Medium		Low to Medium
Change/disruption of power relationships movement	Increased internal inequalities within communities	Medium	▪ Broad based engagement and participation in the process and activities that will influence local communities ▪ Equal distribution of benefits amongst affected communities ▪ Consistent application of compensation rates to all Project Affected ▪ Households/Persons ▪ Internal capacitation of staff / resources utilised to engage and operate in the area (Internal Induction) ▪ External capacitation of community leadership structures to empower existing structures on the consequences and benefits of mining development, pre-construction and throughout operations ▪ Preference to relocation host options within the same villages and traditional authority areas	Low to Medium
	Competition for power of direction and decision-making between community leaders	Medium to High		Medium
	Competition for power over benefit allocation amongst communities and with neighbouring communities	Medium to High		Medium
	Tension and conflict between residents and outsiders	Medium		Low to Medium
	Loss of traditional authority subjects if a household chooses to relocate outside the traditional authority jurisdiction	Medium		Low to Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
Disruption in daily living and patterns	Increase in traffic numbers caused by supplying of goods during construction phase	Low to Medium	▪ Deviation of public road around the mine development rather than cutting through the infrastructure areas. ▪ Traffic minimized through bus and combi services to transport workers to the project site ▪ Low speed limits on access roads with public drop-off / pick-up areas as to not disrupt the flow of trafficRoad crossings should be managed by signing and traffic management measures ▪ Issues and Grievance Procedure available to local people to report bad driving or rules traversing ▪ Alternative methods for school children mode of transport to schools must be explored, i.e. issue of bicycles to school children or contracting school busses ▪ Engagement with Department of Health to arrange regular (weekly) Mobile Clinic services in communities ▪ Engagement with Medical Emergency Service to ensure access to communities	Low to Medium
	Increase in traffic numbers caused by supplying of goods during operational phase	Low to Medium		Low to Medium
	Increase traffic numbers caused by transport and/or traffic of employees from their place of residence to their place of work	Low		Low
	Road diversion causing further distances to travel	Medium to High		Medium to High
	Access from communities to schools in neighbouring communities due to road diversion	Medium		Medium
	Access to clinics located outside the area due to road diversion	Medium to High		Medium to High
	Access and alternative access during incidents by emergency health services	Low to Medium		Low to Medium
Dissimilarity in Social Practices and Disruption of Social Networks	Tension and Conflict due to dissimilar social practices	Medium	▪ In the case of the variable 'disruption of social networks', mitigation is anticipated to be difficult, but probably more achievable in terms of a stable workforce already employed by, or yet to be employed by the Subiflex appointed contractor(s). The contractor would be able to put in place certain rules and regulations with the objective to prevent interference in local social networks. However, mitigation would fall outside the purview of the contractor(s) in the case of disruption of social networks by newcomers in search of employment at the Duel Project. ▪ Increased security on mine premises: Properly constructed and secured ▪ fences can control access to construction sites. Implementing strict access ▪ control of the project site and specifically the contractor's workforce camp.	Low to Medium
	Disruption of social networks	Medium to High		Medium
	Increases in Developmental diseases	Medium		Low to Medium
	Increase in Social Pathologies such as crime, prostitution, teenage pregnancies	Medium		Low to Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
			▪ Construction and permanent workers are identified and marked with clear identifiable clothing ▪ Employment of local people on the mine to improve the poverty levels in the neighbouring communities ▪ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being ▪ legitimate. ▪ Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take. ▪ Grievance Procedure within the local communities ▪ Subiflex to liaise with existing community policing forums and project security to properly secure the project area and surrounding area	
Impact Equity	Unequal distribution of benefits between those who are primarily impacted and those who receive benefits	Low to Medium	▪ Employment should be prioritized to local communities ▪ Local beneficiation programmes to be implemented as part of the Social and Labour Plan ▪ Impacts on tourism and conservation activities are mostly related to noise, visual and air quality impacts – to be mitigated in terms of specialist recommendations	Low
	Unequal access to opportunities or resources	Medium		Low to Medium
Perceptions of and Feelings in relation to the project	Establishment of conflict between the developer and the local communities	Medium to High	▪ Establish ongoing Consultative Forums with concerned groups to air concerns, find possible mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures ▪ Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures ▪ Collaboration for scheduling of mining projects, and determining benchmarks or standards not to be exceeded	Medium
	Objection against the development	High		High
PHYSICAL CAPITAL				
Resettlement or displacement of	Displacement of households within the displacement zone	High	▪ Application of the Avoidance Principle by reducing the footprints of infrastructure where possible	Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
individuals or families			▪ Reducing the Displacement Zone by mitigating noise, blasting and air quality impacts (as per the specialist reports) ▪ Resettlement of structures that cannot be avoided in terms of the resettlement strategy	
Change in services	Adequacy of services to sustain the increase demand	Low to Medium	▪ Establishment of a construction accommodation camp to house those employees that cannot be sourced from the local community due to a lack of skills ▪ Linkages with skills development programmes to optimize skills levels in local communities	Low to Medium
	Increased pressure on current services to accommodate growth	Medium to High		Low to Medium
Communities	Decrease in population growth and ability to sustain services post closure	Medium	▪ Source majority of the Level B construction employees from the local community ▪ Continuous assessment and monitoring of infrastructure and services capacity in focal points (assessment every 5 years) ▪ Determine scale of assistance required at focal points and enter into an agreement with the municipality ▪ Participate in regional development planning forums of the municipality to continuously assess and monitor capacity, determine assistance required ▪ Downscaling and Retrenchment Plan in collaboration with local stakeholders to identify the scale of the impact at closure and required intervention ▪ Utilize the regional development planning forums of the municipality to determine closure strategies and its impact on services and infrastructure maintenance in the longer term	Low to Medium
Change in housing needs/demands	Increased pressure on formal towns to supply housing	Medium to High	▪ Linkages with skills development programmes to optimize skills levels in local communities ▪ Source majority of the Level B construction employees from the local community ▪ Provision of construction accommodation on site ▪ Discussions, agreements and procedures within the host and neighbouring communities to manage site / stand allocation to new residents / parties and village development plans within the villages to limit informal / squatting ▪ Monthly engagement with Traditional Authorities to manage and monitor influx and housing / site allocations	Low to Medium
	Increased property prices due to high demand in formal towns	Medium		Medium
	Increase occurrence of informal housing in the local communities	Medium		Low to Medium
	Increased informal rental income as a source of income within formal and informal / rural towns	Medium		Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
	Decrease of property prices within formal towns post closure	Low to Medium	▪ Facilitation of housing development for external workforce ▪ Link-up with planned housing developments and private developers to unlock possible development to supply the projected demand ▪ Subsidy programmes to employees to access housing ▪ Participate in Regional Structures to plan for anticipated impacts, starting during the Construction Phase to ensure planning is done in advance ▪ Establish a future forum with representation from the workforce and municipality to discuss potential difficulties and solutions ▪ Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment ▪ Portable skill programmes to equip workforce to enter other economic sectors	Low
	Economic hardship due to the loss of rental income as a source of income within formal and informal / rural towns, post closure	Medium		Low to Medium
	Surplus housing supply as people migrate out of formal towns, post closure	Low to Medium		Low
Change in access to resources that sustain livelihoods	Loss of grazing land	High	▪ Demarcated areas where fire wood can be collected that was cleared for the Construction Phase ▪ Establishment of medicinal plant nursery ▪ Provision of alternative grazing land ▪ Leasing of community land impacted by mining ▪ Monitoring the impact on livestock ▪ Fair compensation negotiated and agreed with households that will loose access to agricultural land or vegetable gardens ▪ Continuous consultation with Conservation bodies discussing co-existence and mitigation measures ▪ Implement a consultation programme with regional stakeholders in the development of a closure plan and rehabilitation programme ▪ Determine the regional needs and characteristics to ensure post mining use of land enhances the regional characteristics	Medium to High
	Loss of arable land	Medium to High		Medium
	Loss of vegetable gardens	High		Low to Medium
	Loss of access to medicinal plants	Medium to High		Low to Medium
	Loss of access to firewood	Medium		Low to Medium
HUMAN CAPITAL				
Participation of Local Communities in Employment	Increase in available employment opportunities locally	Medium to High	▪ Source the maximum number of employees from the local area for temporary job opportunities ▪ Implement skills development programmes in the areas where most job opportunities will be created, i.e. operators and drivers	Medium to High
	Availability of appropriately qualified workers	Medium		Low

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
Opportunities and Skills Development	Increase in skills development programmes and therefore skill levels of the local communities	Medium	▪ Make available bursary opportunities to build skill capital in the region ▪ Establish a database of local people with information on qualifications and skills, utilize this database to develop skills plans and recruit local people. ▪ Implement portable skills development programmes ▪ Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods ▪ Establish a future forum with representation from the workforce to discuss potential difficulties and solutions ▪ Implementation of programmes to minimize and mitigate the impact of downscaling and retrenchment	Medium
	Employment of skilled outsiders creates tension and conflict in the local communities	Medium		Low to Medium
	Loss of job opportunities due to downscaling of the mine employment	Low to Medium		Low
Participation of local procurement opportunities	Empowerment of local business through procurement and capacity building	Medium to High	▪ Establish a database of local businesses, utilize this database to establish partnerships between local and larger service providers as well as locally preferred work packages ▪ Consultation and Feedback on results on a regular basis ▪ Implementation of capacity building programmes to minimize and mitigate the impact of mine downscaling and closure. ▪ Closure plan implementation	Medium to High
	Increased tension and conflict between business in competition for contracts	Low to Medium		Low to Medium
	Loss of business opportunities during downscaling causing economic hardship and retrenchment	Low to Medium		Low
Health Impacts	Increase in health incidents related to air pollution	Medium	▪ Mitigation measures to minimize air quality include: ▪ Wet suppression ▪ Wind speed reduction ▪ Chemical stabilisation ▪ Air quality and health monitoring systems to be implemented ▪ Communication Strategy to keep community informed of air quality risks and mitigation measures ▪ Health awareness programmes with workers and communities to educate on sexually transmitted diseases and HIV/AIDS and other illnesses such as TB and Malaria ▪ Provision of preventative measures (including condoms) ▪ Collaboration with local health practitioners at local clinics, health committees and home-based care organisations	Low to Medium
	Increases in Developmental diseases	Medium		Low to Medium
Safety impacts: Increase in Crime	Increase in social pathologies such as alcohol abuse, prostitution and vandalism	Medium	▪ Cooperation, Participation and support to the anti-poaching initiatives in the area.	Low to Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
	Increase in theft, burglary, armed robbery, assault and even murder	Medium	▪ Increased security measures (fencing, access control and monitoring) on mine premises. Properly constructed and secured fences can control access to mine sites. Implementing strict access control of the project site and specifically the contractor's workforce camp. Curfew times to be established in accommodation areas. Construction workers accommodated on mine are identified and marked with clear identifiable clothing ▪ Code of Conduct to form part of induction of new workers with a clear statement and procedure regarding access, conduct and identification. All workers should wear clothing marked (and reflective vests) with the logo of the construction firm/contractor or sub-contractor as well as identification cards that cannot be easily forged, so that they can be easily recognized as being legitimate. ▪ Workers to be screened including criminal background checks. ▪ Employment of local people on the mine to improve the poverty levels in the host and neighbouring communities ▪ Workers should be urged to recognize and report suspicious activity and signs of burglary and be informed of crime prevention measures that they themselves can take. ▪ Subiflex to participate and support existing community policing forums and project security to properly secure the project area and surrounding area ▪ Implement downscaling and retrenchment strategies ▪ Implement portable skills development programmes ▪ Design and implement economic development programmes that will assist people being retrenched in sustaining their livelihoods	Low to Medium
	Increase in poaching in the neighbouring conservation areas & game farms	Medium to High		Medium
Safety impacts: Infrastructure & Operational safety	Increased road accidents due to increased traffic volumes	Medium to High	▪ Conduct regular full risk assessment and have procedures in place to deal with emergency incidents ▪ Make available a complaint and grievance mechanism where people can lodge any complaint or raise issues regarding damages to their property due to risk and safety exposure ▪ Involve local emergency services to support on mine emergency procedures ▪ Establish on site emergency equipment and appoint safety staff	Low to Medium
	Increased Fire risks surrounding the mine site	Medium		Low to Medium
NATURAL CAPITAL				

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
Change in sense of place	Increase nuisance effect due to increased levels of dust and noise	High	▪ Ensure noise levels post mitigation at night is below 40 dB ▪ Ensure noise levels post mitigation during the day is below 50dB ▪ If the noise levels cannot be mitigated below these levels, an assessment of the housing within the community that may be impacted must be conducted. ▪ Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures ▪ Establish ongoing Consultative Forums with concerned groups to air concerns, refine mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures ▪ Implementation of traffic management measures ▪ Implementation of insulation and mitigation measures for noise ▪ Implementation of visual barriers and other mitigation measures as recommended in the visual study ▪ Implementation of particle and dust suppression methods ▪ Colour schemes must complement the local environment. ▪ Minimising disturbance to vegetated areas outside the critical development areas where possible ▪ Revegetation/rehabilitation of disturbed sites in parallel with development ▪ Rehabilitation and Reclamation of affected areas	Medium
	Increase in traffic with a disruptive effect	Medium		Low to Medium
	Visual intrusion of mining infrastructure	High		Medium
	Decrease in Sense of Place in the Region	Medium		Low to Medium
Change in ecotourism opportunities	Decrease in tourists and visitors during the Construction Phase	Medium	▪ Continuous communication with all stakeholders providing information on anticipated impacts and planned mitigation measures ▪ Establish ongoing Consultative Forums with concerned groups to air concerns, refine mitigation measures for their perceived impacts and monitor implementation and effectiveness of mitigation measures ▪ Attempt to minimize impacts on tourism through implementation of mitigation strategies focusing on aspects that may affect tourism characteristics including traffic, noise, and visual aspects ▪ Reduction of noise and visual impacts by the implementation of various mitigation measures such as visual barriers and noise insulators	Low to Medium
	Decrease in tourists and visitors during the Operational Phase	High		Medium

Impact	Impact Description	Impact Significance	Mitigation Measures	Impact Significance
			▪ Collaborate with local stakeholders in terms of regional planning to ensure certain areas are protected for tourism and hunting activities. ▪ Minimising disturbance to vegetated areas outside the critical development areas where possible ▪ Revegetation/rehabilitation of disturbed sites in parallel with development ▪ Rehabilitation and Reclamation of affected areas ▪ Adopting principles of good corporate citizenship focused on conservation of natural resources such as water, biodiversity, etc. Inclusion of these principles and actions into information disseminated in the local area (“how mining can be done differently”)	

6 SOCIAL MANAGEMENT AND MONITORING STRATEGIES

6.1 Introduction

This section presents the proposed social management and monitoring strategies that would be implemented to ensure that all identified impacts are addressed and managed accordingly. The main aim of the strategies is to minimize negative impacts and maximize positive impacts by means of effective compensation and mitigation measures. Logical Framework Matrix (LFM) methodology was used to develop the strategies listed below.

- **Communication and Consultation Plan**: Ensuring continuous engagement with project affected parties and stakeholders
- **Issue and Grievance Management Strategy**: To ensure the appropriate management of issues and grievances
- **Influx Management Strategy**: To manage the influx of job seekers
- **Resettlement, Compensation and Mitigation Strategy**: to compensate and mitigate for direct and indirect project impacts resulting either a physical or economical loss (attached as a separate document)
- Employment Strategy
  - Recruitment Strategy: to maximise employment opportunities for the local communities and reduce the influx of a foreign labour force whilst ensuring an effective construction and operational process.
  - Skills Audit: to capture all project relevant skills in the project area with the aim to enhance local employment figures
  - Recruitment Manual: to include a list of employment opportunities that will become available during the project planning, construction and operational phases and provide guidelines on procedures to be followed by aspiring employment seekers and employers
  - Employment Information Desk: to establish an employment information desk to assist with the day to day management of project related labour issues
  - Human Resource Development and Training Strategy: to identify appropriate training and skills transfer opportunities that will enhance the skills level of the local labour force both during and after project implementation.
- **Procurement Policy:** to ensure that local business outfits, especially those of HDIs, women and SMMEs get allocated a fair business share of project related business opportunities.
- **Housing and Infrastructure Policy**: to ensure that project related housing and service delivery are designed and implemented such that it stands to alleviate local housing and service delivery stumbling blocks in the longer-term.

- **Education Strategy:** to ensure that probable impacts on project area educational facilities are manageable and design applicable mitigation measures where applicable
- Health Strategy
  - **Occupational Health and Safety Strategy**: to ensure that during the project construction process and the operational phase of the project, employees receive adequate health support from the project team for work-related health problems
  - **Community Health and Welfare Strategy**: to ensure that the project intervention will not have a negative impact on the health and welfare infrastructure in the project area, and to suggest appropriate measures to enhance the capacity of existing health infrastructure
  - **Traffic Safety and Awareness Strategy:** to ensure that appropriate traffic management measures are planned and employed, in anticipation of the major increase in both heavy and light vehicle traffic.
  - **Safety and Security Strategy:** to ensure that the project areas as well as the impacted communities are protected adequately through the formal policing system as well as additional safety measures such as additional security at the project sites and community policing in the project area
- **Archaeological and Heritage Strategy:** to ensure that archaeological and heritage resources are managed in accordance with relevant legislation and in consultation with all relevant interested and affected parties
- **Social Monitoring and Evaluation Strategy:** to ensure that the project intervention process is monitored with the aim of implementing corrective measures if and when required

In the following sections, the proposed strategies will be discussed in terms of a hierarchy of objectives, outputs and activities and targets.

- **Objectives** – objectives of strategy / policy which highlight the motivation behind each strategy.
- **Outputs** – the expected deliverables for the objectives to be achieved
- **Activities -** actions that should be undertaken to get the expected deliverables. These activities are referenced against the timeframe within which they should be undertaken and the parties that would take responsibility for carrying out the activities.
- **Targets** – probable key success factors / performance indicators by which implementation success of strategy should be monitored. In a significant number of cases, specific targets would only be set in the process of implementing the strategies.

6.2 Strategies

6.2.1 Communication and Consultation Strategy

6.2.1.1 Objective

- To develop and **maintain an ongoing process of public participation** (refer Public Participation Programme Section of the report) to ensure the continued involvement of interested and affected parties in the project in a meaningful and responsible way
- To establish an Environmental Management Committee (EMC) to inform and monitor the environmental and social planning and implementation processes

6.2.1.2 Outputs

- An EMC comprising of representatives from community stakeholder sectors Subiflex and relevant national, provincial and local authorities.
- A database of project interested and affected parties, stakeholder groups and stakeholder sectors.

6.2.1.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Consult and constitute an EMC	Before Construction	Mining Right Holder
Develop a constitution for the EMC to guide its operations	Before Construction	Mining Right Holder EMC

6.2.1.4 Targets

- Quarterly EMC meetings
- EMC reports

6.2.2 Issue and Grievance Management Strategy

6.2.2.1 Objective

- Define mechanisms and procedures to manage the land use and influx that may result due to the mine development during construction and operational phases

6.2.2.2 Outputs

- Ensure communities and stakeholders are aware of the opportunity to express grievances and complaints.
- Ensure communities and stakeholders feel free to express their complaints / grievances
- Encourage communities and stakeholders to use the procedure, but also warned not to abuse it with false grievances.
- Ensure sensitive grievances are dealt with privately, and confidentiality of information is maintained.

6.2.2.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
A Grievance is submitted in written form via fax or project email detailing the Party lodging the grievance, contact details, details of the grievance, location and proposed solution.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
The existence and conditions of access to this procedure and avenue shall be widely disseminated within the stakeholder environment and affected communities as part of the consultation undertaken for the development in general.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
The Stakeholder Engagement Officer (SEO) at the mine which will receive the grievance (via fax or email) must ensure the Grievance Register has been correctly completed and the grievance is clearly understood.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
Grievances will be lodged (via email, fax or in person) with the SEO at the mine	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
The SEO will send a copy to Mining Right Holder / Management within 48 hours (2 working days).	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
Within 7 days management will submit a response to the stakeholder/community.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
If the response to the grievance has not been accepted or resolved, the SEO will engage the Grieving Party to facilitate an acceptable solution, if acceptable this would be put in writing as the final response to Grieving Party.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
If the response to the grievance has not been accepted or resolved the mine management will enter a Mediation phase, where a meeting will be held with the party that submitted the Grievance in an attempt to resolve.	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
If Grievance is not resolved through Mediation the Grieving Party are open to take up any of the formal avenues available in terms of South African Legislation	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer

6.2.2.4 Targets

- Registration and Resolve of grievances
- Amicable mediation and settlement.

6.2.3 Influx Management Strategy

6.2.3.1 Objective

- Define the scope and dimensions of mine-related influx and its management, and set out applicable management interfaces
- Define roles and responsibilities for influx management
- Outline the applicable Project Standards relevant to this Management Plan
- Define suitable mitigation measures for the direct and indirect negative impacts associated with population influx to the Duel Project Area of Influence, by people seeking employment or moving to the area in expectation of other benefits
- Define effective plans and procedures for managing potential influx impacts in the Duel Project

6.2.3.2 Area of Influence

- Define monitoring and reporting procedures, including Key Performance Indicators; and
- Defined training requirements associated with influx management.

6.2.3.3 Outputs

- Mitigation and mininizing the effect of influx
- Development of capacity of local authorities in land use management
- Monitoring influx and the effectiveness of the influx management strategies

6.2.3.4 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Establish an internal cross-functional influx coordination committee	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
Influx Steering Committee to refine and agree on the Influx Management Plan and Monitoring Programme	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
Manage expectations for opportunities: ▪ Communicate policy on procurement & recruitment ▪ Notice of opportunities ▪ Briefing on labour and procurement statistics ▪ Improve communication to communities	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer
Land allocation and usage management ▪ Updated full census of the local communities ▪ Updated full census of the local communities ▪ Compilation of a future land-use plan in conjunction with Local Municipal Planning directorate and the Traditional Authority	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer Traditional Authority Local Municipality

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
▪ Training of the Traditional Authority ▪ Awareness Newsletters ▪ Provide targeted assistance to vulnerable groups		
Infrastructure and Services ▪ Assist with capacity-building for local government organisations to develop and budget for appropriate town and development planning, infrastructure and service provisions ▪ Monitor service delivery levels	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer Local Municipality
Monitoring Influx ▪ GIS review of village development and expansion ito land use plan ▪ Establish a Grievance and Issue Management ▪ Procedure to manage any issues raised by existing land occupants and newcomers	Before & during construction, before and during operations	Mining Right Holder Contractor Engagement Officer

6.2.3.5 Targets

- Identification of influx influence zone and implementation of influx management strategies at these areas
- Create capacity and awareness in the management of influx
- Reduce secondary impacts due to influx

6.2.4 Resettlement, Compensation and Mitigation Strategy

6.2.4.1 Objective

- To ensure appropriate and fair resettlement, compensation and mitigation for the loss of housing, land, infrastructure, business potential, employment opportunities and income for all affected landowners, land users, employees, and other related parties affected by the development intervention
- To ensure adherence to the Resettlement, Compensation and Mitigation Principles as described in the strategy
- To protect the interests of all project affected parties through commitment to sound legal agreements

6.2.4.2 Outputs

- A user-friendly and adaptable resettlement, compensation and mitigation strategy to specify the policies and procedures according to which the resettlement, compensation and mitigation processes will occur.
- Timeous and successful implementation of the Resettlement, Compensation and Mitigation Strategy

6.2.4.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Development of a Draft Resettlement, Compensation and Mitigation Strategy with Livelihood Restoration Programme	Directly Post Mining Right Approval	Mining Right Holder Resettlement Specialist
Presentation and discussion of Strategy amongst project proponent and Project Affected Parties Engagement Structure	Directly Post Mining Right Approval	Mining Right Holder Resettlement Specialist
Valuation of affected properties including housing, land, other natural resources, infrastructure and potential business losses to determine replacement and compensation rates to be increased in line with CPI.	Directly Post Mining Right Approval	Independent Valuer
Compilation of resettlement affected party list and asset registrations	Directly Post Mining Right Approval	Mining Right Holder Resettlement Specialist
Compilation of the Eligibility Entitlement Matrix including engagement with project affected parties	Directly Post Mining Right Approval	Mining Right Holder Resettlement Specialist
Investigation, Consultation and Finalisation of options available to project affected parties in terms of resettlement host areas (housing and alternative land).		Mining Right Holder Resettlement Specialist Civil Engineer Geotechnical Engineer Town Planner
Drafting of resettlement, compensation and or mitigation agreements between directly affected parties and the project proponent		Mining Right Holder Resettlement Specialist Legal counsel Community legal representation
Implementation of household resettlement process Payment of compensation to project affected parties Provision of alternative land	24 months prior to the development of the respective phases of the project	Mining Right Holder Resettlement Specialist Architects Civil Engineers Town Planner Quantity Surveyor Contractor
Implementation of the Livelihood Restoration Programme	In phases post each resettlement phase	Mining Right Holder Social Development Specialist

6.2.4.4 Targets

- Completion of Resettlement, Compensation and Mitigation Strategy and Resettlement Actions

Plans document before construction commences:

- No construction activities that could potentially infringe on housing, and or the land rights of current land owners and users may commence before there is agreement between the Mining Right Holder and the Project Affected Parties.
- Project Affected Households must be evaluated and the inclusion of at least one family member in a human resource development programme must be considered.

6.2.5 Employment Strategy

The Employment Strategy consists of five main components, namely:

- Recruitment Strategy
- Skills Audit

- Recruitment Manuel
- Employment Information Desk
- Human Resource Development and Training Strategy

6.2.6 Recruitment Strategy

6.2.6.1 Objective

To develop an official recruitment policy this seeks to:

- Maximise employment opportunities for the local communities, including identifying and encouraging use of labour intensive practices in such a way as not to negatively influence the operation quality or quantity, project timeframes;
- Ensure that pursuant to the completion of construction and operation phases, developed skills are retained in long-term employment opportunities, and where appropriate and possible, through the assistance of local business, be transferred to related local employment opportunities and businesses;
- Provide appropriate incentives for local businesses that provide skills transfer opportunities and new employment opportunities to the local community;
- Minimise the utilization of imported labour as far possible within the ambit of applicable legislation

6.2.6.2 Outputs

Fair, equitable, transparent and legally defensible recruitment policy accepted by project stakeholder groups, Mining Right Holder and the Engineer and Contractor

6.2.6.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Development of a Recruitment Policy that adheres to relevant labour legislation such as the Basic Employment Conditions Act and the Labour Relations Act	Before construction	Mining Right Holder, Contractor, Engineer, Legal Counsel
Access to Recruitment Policy at Employment Information Desk for viewing by interested and affected parties	Before and during construction	Mining Right Holder, Engineer, Contractor, Employment Information Desk

6.2.6.4 Targets

- Recruitment Policy should be finalised before Tender process for suitable Engineer and Contractor commences.
- The policy should set targets for the following performance indicators:
- Employment percentage of local labour recruited in unskilled, semi-skilled and management categories
- Employment percentage of HDIs

- Employment percentage of broader District & Provincial residents recruited in the professional category
- Employment percentage of women, youth and disabled people
- Meeting of targets should be ensured during the project implementation process and should be open to scrutiny by interested and affected parties.

6.2.7 Skills Audit

6.2.7.1 Objectives

- To identify project appropriate skills within the surrounding communities
- To provide priority of employment for residents from the surrounding communities
- To inform the development and content of the recruitment policy
- To provide information to the proposed Employment Information Desk

6.2.7.2 Outputs

A Skills Register database, which would contain recruitment-relevant information of the residents of the surrounding communities.

6.2.7.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Develop an effective and appropriate skills registration instrument and process	Before construction	Mining Right Holder
Skills registration process (e.g. road shows, registration by interested parties at central and accessible venue)	Before construction, during operations	Mining Right Holder
Development of Skills Register database	Before construction	Mining Right Holder
Data capturing and analysis into database. Continuous updating of database	Before construction, during operations	Mining Right Holder
Integration with similar skills audit initiatives in project area, e.g. Makhado Local Municipality or Dept of Labour unemployment databases	Before construction, during operations and after decommissioning	Mining Right Holder Makhado Local Municipality Department of Labour
Development of a verification system to ensure that information provided were correct, especially pertaining to residency status of registered individuals	Before construction, during operations	Mining Right Holder
Hand-over of databases to Engineer, Contractor and the Employment Information Desk	Before construction,	Mining Right Holder Employment Information Desk

	during operations	

6.2.7.4 Targets

- Registration of potentially economically active project area residents interested in employment at least two months before construction commences.
- The project area for skills registration should include directly affected communities such as Makushu, Mosholombe, Pfumembe and the Nemamilwe land claimant beneficiaries as well as other communities within the Mphephu Traditional Authority jurisdiction.

6.2.8 Recruitment Manual

6.2.8.1 Objectives

- To, as far as is practically possible, compile a register of employment opportunities that will become available during the project planning, construction and operational phases
- To provide guidelines on the procedures to be followed by aspiring applicants and employers e.g. procedures for advertising jobs, procedures for applying, procedures for notifying successful and unsuccessful applicants, etc.
- To glean a clear understanding of the number and extent of primary and secondary employment opportunities related to the project.
- To develop a database interface between the register of employment opportunities and the Skills Audit Register to ensure maximisation of employment opportunities for local labour.
- To support the Recruitment Policy e.g. by prioritising longer-term employment and employment with a skills training component in the interest of local labour.

6.2.8.2 Outputs

- A Recruitment Manual
- An Employment Opportunity Register

6.2.8.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Compile Recruitment Manual	Before construction	Mining Right Holder Engineer Contractor
Compile Employment Opportunity Register based on information received from Engineer and Contractor.	Before construction, during operations	Mining Right Holder Engineer Contractor Employment Information Desk

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Categorization of employment job opportunities. E.g. construction period, operational period as well as type of employment, e.g. artisans, operators, etc.		
Development and capturing of employment register information on database able to interface with Skills Audit database. Regular updating of databases.	Before construction, during operations	Mining Right Holder Database specialist Employment Information Desk
Identification of suitable venues for the advertisement of recruitment information e.g. community halls, libraries, churches, shops etc. The project should erect secure notice boards for this purpose.	Before construction, during operations	Mining Right Holder Employment Information Desk

6.2.8.4 Targets

- Completion of initial Employment Register database before construction commences.

6.2.9 Employment Information Desk

6.2.9.1 Objectives

- To manage the implementation of the Recruitment Policy and keep copies of the Recruitment Manual
- To monitor the efficient utilisation of the Recruitment Manual
- To keep the Employment Opportunities and Skills Register databases up to date
- To make labour related information available to the project proponent as and when required by means of the mentioned databases.

6.2.9.2 Outputs

- Successful implementation of the recruitment policy through effective collection and dissemination of recruitment information
- Effective use of the Recruitment Manual, Employment Register and Skills Register database

6.2.9.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Establishment of staffed Employment Information Desk at an accessible venue(s) to ensure the integration of employment initiatives and enhance communication between project role-players	Before construction, during operations	Mining Right Holder Contractor
To assist employees and employees to understand their rights and responsibilities regarding employment according to the applicable legislation	Before construction, during and after operations	Mining Right Holder Employment Information Desk Contractor Trade Union movement
To manage the updating of the Skills Register and Employment Register databases	Before	Mining Right Holder Employment Information Desk

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
	construction, during operations	
Monitor employment trends on the project and specifically employment from the local areas	During construction	Mining Right Holder Employment Information Desk EMC
To facilitate the identification of training needs amongst employees, obtaining approval and arranging training opportunities for current or prospective employees (Refer Section below on skills development and training)	Before construction, during operations	Mining Right Holder Engineer Contractor Employment Information Desk Training Consultants

6.2.9.4 Targets

- Establishment of functioning Employment Information Desk in due time before recruitment for construction starts

6.2.10 Human Resource Development Strategy

6.2.10.1 Core Skills and Artisan Development

Objectives

- To provide core skills and artisan development to allow individuals on the skills database to assume employment on the Duel Project, should the need arise during the construction and operational phases

Outputs

- Trained and well-equipped potential employees with training certificates ready to be employed by the Fuleni Anthracite Project

Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Identification of employment opportunities that requires core skills or artisan training.	Before & during construction, before and during operations	Mining Right Holder Contractor Employment Information Desk Skills Development Service Provider
Identification of individuals on the Skills Register that should benefit from skills development	Before & during construction, before and during operations	Mining Right Holder Contractor Employment Information Desk Skills Development Service Provider
Skills Development of identified potential employees	construction,	Mining Right Holder Contractor Employment Information

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
	before and during operations	Desk Skills Development Service Provider
Environmental Awareness Training for all different levels of construction and operational workers	Before & during construction, before and during operations	Mining Right Holder Contractor Employment Information Desk

Targets

- Definition of employee percentages that would receive skills development in (core skills, and (b) artisan skills that would be required during the Fuleni Anthracite Project.

6.2.10.2 Learnerships and Internships

Objectives

- To provide learnerships and internships during the construction and operational phases aimed at the development of appropriate practical skills transfer processes and opportunities.
- To provide learnerships and internships and ensure that candidates have the required skills and insight to undertake the tasks that they were appointed to do, safely and efficiently.

Outputs

- Completed learnerships and internships per annum

Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Identification of learnerships and internship opportunities	Before & during construction, before and during operations	Mining Right Holder Contractor Skills Development Service Provider
Identification of individuals on the Skills Register that should benefit from learnerships and internships	Before & during construction, before and during operations	Mining Right Holder Contractor Employment Information Desk Skills Development Service Provider
Learnerships and Internships of identified potential employees	Before & during construction, before and during operations	Mining Right Holder Contractor Employment Information Desk Skills Development Service Provider

Targets

- Training of employees before active duty occurs, both before and during construction.

6.2.11 Procurement Policy

6.2.11.1 Objectives

- To develop a procurement policy within the guidelines and stipulations of relevant legislation
- To maximise employment, training and development opportunities for local businesses, HDI-owned businesses, SMMEs, women-owned businesses, as well as disabled business people.
- To ensure transparent tendering and procurement procedures
- To offer assistance to local businesses in tender and procurement procedures

6.2.11.2 Outputs

- A practical and transparent Procurement Policy
- Access to Preferential Procurement Policy, advice and guidance at Employment Information Desk

6.2.11.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Drafting of a Procurement Policy reflecting the objectives of the relevant legislation and project employment and procurement objectives. In cases of discrepancies between project objectives and legislation, legislation takes precedence.	Before construction	Mining Right Holder Contractor
Monitoring of Procurement Policy implementation by relevant project role-players and EMC.	Before and during construction and during operations	Mining Right Holder EMC Employment Information Desk Contractor

6.2.11.4 Targets

- Setting targets to achieve in terms of local procurement and HDSA procurement (% of spend)
- An improvement of performance annually towards reaching set targets

6.2.12 Community Economical Enhancement

6.2.12.1 Objective

- To identify CBOs and local business people that could, in collaboration with the Mining Right Holder and the Local Government structures, enhance positive project impacts especially in the business development and mentorship areas
- To identify development initiatives (especially with long-term returns) for community groups and individuals to participate in

6.2.12.2 Outputs

- A profile document of community organisations, their membership and their skills who would be interested in participating in the community development programmes
- Memorandums of Understanding between the Mining Right Holder and community groups to facilitate participation and ownership of community development projects.

6.2.12.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Design of Community Institutional Profile and Stakeholder Database	Before and during Construction	Mining Right Holder
Identification and listing of secondary development and employment opportunities resulting from project intervention for community to benefit from, e.g. - Harvesting of woody biomass and medicinal plants from the project affected area - Re-vegetation of disturbed land due to construction intervention - Development and landscaping of rehabilitated areas	Before, during and after construction	Mining Right Holder with community driven joint ventures, Contractor, Employment Information Desk
Implementation of Local Economic Development Programmes in line with the Social and Labour Plan	Before, during and after construction	Mining Right Holder with community

6.2.12.4 Targets

- All contracts for the harvesting and utilisation of natural resources from the project area should be awarded to local business ventures before the construction process can damage the materials that had been identified for harvesting.
- Local institutional and economical capacity building of especially HDI groups in partnership with more established businesses. Such processes must only be facilitated by the Mining Right holder and not driven by them, since they would have as main aim long-term capacity building and ownership by the local communities.

6.2.13 Housing and Infrastructure Strategy

6.2.13.1 Objectives

- To ensure enhancement of local housing and infrastructure policies and planning (e.g. cognisance of the Local Government's Integrated Development Plan process).
- To ensure available and adequate housing for employees
- To partner with Government on the provision of affordable housing options in rural areas to local employees
- To ensure that all project related houses, site offices, roads and related infrastructure are located such and designed for use by the community after construction. · To ensure that existing local infrastructure e.g. roads, houses, sanitation, refuse removal systems are improved and supported by the project rather than duplication of infrastructure.

6.2.13.2 Outputs

- Staff housing and infrastructure policy
- Establishment of temporary accommodation during construction phase
- New /or upgraded community infrastructure if required
- Partnership documentation between the mining right holder, local and district municipalities

6.2.13.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Establishment of temporary accommodation during construction phase	Before construction	Before construction Contractor Traditional Authority
Development of Housing and Infrastructure Policy	Before construction	Mining Right Holder Local Government
Identification of suitable housing options for staff	Before operations	Mining Right Holder Local Government
Integration of activities and funding of infrastructure with the local government or private development initiatives	Before operations	Mining Right Holder Local Government
Ongoing assessment of capacity and location of social, welfare and recreational facilities	During operations	Mining Right Holder Local Government Service Providers
Expansion or support of social and recreational facilities to meet additional project demand	During operations	Mining Right Holder Local Government Service Providers

6.2.13.4 Targets

- Availability of affordable housing options to employees

6.2.14 Education

6.2.14.1 Objectives

- To ensure that the project intervention will not have a significant negative impact on the educational facilities in the project area by an unmanageable influx of learners into current education infrastructure impacts exceeding the allowed standards for education caused by air pollution, noise or blasting vibration
- To devise appropriate and practical mitigation options to manage such an impact, if applicable

6.2.14.2 Outcomes

- Appropriate support to the education infrastructure and capacity in the project area, e.g., maintenance and operational support, additional personnel capacity, construction of additional infrastructure if required.

6.2.14.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Further detailed assessment of education facilities and capacity in the project area	Before construction	Mining Right Holder Dept. of Education
Definition of number of additional learners to use local educational facilities (based on expected size of external labour force)	Before construction	Mining Right Holder Engineer Contractor
Definition and implementation of applicable influx mitigatory measures if required, e.g. maintenance and operational support such as appointment of additional staff at project cost, provision of teaching aids, construction of additional classrooms etc.	Before construction and during operations	Mining Right Holder Engineer Contractor Dept. of Education School Governing Bodies
Establishment of noise, vibration and air pollution monitoring stations at each of the sensitive points within 1km from mining area	Before construction and during operations	Mining Right Holder Environmental Manager Contractor
Definition and implementation of applicable noise/vibration/air pollution mitigatory measures if required, e.g. air particle suppression, noise insulation of school building, double glazing of windows, repairs, schedule of blasting, resettlement (as a last resort if mitigation proves to be ineffective)	Before construction and during operations	Mining Right Holder Engineer Contractor Dept. of Education School Governing Bodies
Monitoring effectiveness of mitigatory measures and reporting results to EMC	During construction	Mining Right Holder Engineer Environmental Manager EMC

6.2.14.4 Targets

- Appropriate support and assistance to local educational facilities impacted by the project
- Protection of educational facilities and activities against an impact from mine operations

6.2.15 Health and Safety strategy

The Health Strategy consists of four components, namely:

- Occupational Health and Safety
- Community Health and Welfare Programme
- Traffic Safety Strategy
- Community Safety and Security Strategy
- Anti-poaching Collaboration Strategy

6.2.15.1 Occupational Health and Safety

Objectives

- To ensure adherence by the Engineer, Contractor and other employed entities to the Mine Health and Safety Act (Act 29 of 1996) and the Occupational and Safety No. 85 of 1993 and as amended in No. 181 of 1993 and relevant NOSA regulations and requirements

Outputs

- Health and Safety Policy by Engineer and Contractor subject to national legislative and NOSA requirements
- Establishment of a First Aid and Emergency Health facility on site for emergency use by project employees

Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Health and Safety Policy by Engineer and Contractor	Before construction	Mining Right Holder Engineer Contractor Safety Manager
Design of Health and Safety Audit Process and site inspections to ensure compliance to Health and Safety Policy	Before and during construction	Mining Right Holder Engineer Contractor Safety Manager
Conduct compulsory Health and Safety Training Programme in procedures and responsibilities for the employees and employer	Before and during construction	Engineer Contractor Safety Manager
Compilation and distribution of printed copies (in all relevant languages) of Health and Safety Policy to employees so that they are aware of their rights and responsibilities	Before and during construction	Mining Right Holder Engineer Contractor

Targets

- Adherence to Health and Safety Regulations and requirements.

6.2.15.2 Community Health and Welfare Programme

Objectives

- To ensure that community health and welfare issues are addressed in an integrated and co-ordinated fashion with existing health and welfare facilities and infrastructure

Outputs

- Community Health and Welfare Strategy
- Community Health Awareness workshops

Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Facilitate the development of a Community Health and Welfare Programme in consultation with Health and Welfare Authorities in the project area, both governmental and non-governmental Facilitate presentation of Community Awareness Programmes on STDs and HIV/Aids, unwanted pregnancies Ensuring the availability of applicable birth control measures	Before and during construction / operations	Mining Right Holder Local Health Services Dept. of Health Contractor
Implementing appropriate noise and dust monitoring equipment Monitoring of noise and dust levels during the construction process Implementation of appropriate mitigation measures to curb noise and dust pollution impact on the local communities	During Construction and Operations	Mining Right Holder Contractor Environmental Manager Health Facilities
Develop a recreation and entertainment programme for project employees and the general community e.g. organised sport events	During Construction and Operations	Contractor Dept. of Health

Targets

- Appropriate support and assistance to local health facilities impacted by the project
- Hand-over of support measures (if applicable) to the relevant role-players.
- Community Health and Welfare Awareness programmes in co-ordination and with the guidance of local health staff and facility requirements.

6.2.15.3 Traffic safety strategy

Objectives

- To undertake a road safety audit for all road infrastructure that would be directly affected by the movement of construction vehicles, product transport vehicles and other related traffic
- To further evaluate existing traffic patterns and road conditions in the project area

- To further evaluate the condition and suitability of proposed access roads to the project site
- To ensure that adequate traffic management tools are employed for the duration of the project construction process

Outputs

- A Traffic Management Strategy
- A Road Safety Plan for implementation by the contractor in consultation with Local Government Traffic Authorities

Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Conduct a Road Safety Audit and traffic counts, gathering and analysis of current traffic trends, specifically on routes that will be utilized as access routes to the construction site or to transport labourers and building materials to the construction site	Before and during construction / operations	Mining Right Holder, Contractor
Compile a Traffic Management and Safety Plan. This may need to inform the tender process with regards to scheduling of construction material deliveries etc.	Before and during construction / operations	Mining Right Holder Contractor Dept. Of Transport
Present Traffic Management and Safety Plan to Dept. of Transport for input and support	Before and during construction / operations	Mining Right Holder Contractor Dept. Of Transport
Upgrading of roads and construction of new roads if required for the project implementation process	Before and during construction / operations	Mining Right Holder Engineer Contractor Dept. Of Transport
Drafting of hand-over agreements between mining right holder and relevant authorities, provincial and or local regarding maintenance of road infrastructure Implementation of Traffic Management and Safety Plan	Before and during construction / operations	Mining Right Holder Engineer Contractor Dept. Of Transport

Targets

- Finalisation of access routes to project
- Completion of the Road Safety Audit before construction commences
- Completion of the Traffic Management Plan before construction commences.

6.2.15.4 Safety and Security

Objectives

- To ensure that the project intervention will not have a significant negative impact on the safety and security resources and facilities in the project area by e.g. a significant increase in criminal activities.

- To devise appropriate and practical mitigation measures to manage such impacts e.g. support of local existing safety and security structures, either by means of additional infrastructure, equipment, personnel or other maintenance and support mechanisms
- To ensure that community safety and security issues (particularly as raised by local community members during public meetings) are addressed in an integrated and co-ordinated fashion with existing safety structures such as the SAPS and private security companies
- To ensure that the contractor's materials, plant and equipment are well secured.
- To ensure that the public do not have unrestricted access to the construction site, the explosives storage area or other hazardous substances and areas on the construction site.

Outputs

- Safety and Security Plan
- A safe and secure living environment for the local affected community and the construction site employees

Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Compiling a Safety and Security Plan in consultation with the SAPS, community policing forums and private security companies in project area	Before construction	Mining Right Holder, SAPS, Contractor
Assessment of current safety and security infrastructure and personnel capacity in the project area	Before construction	Mining Right Holder, SAPS, Contractor
Definition and implementation of practical mitigation measures based on the outcome of the assessment process, e.g. augmentation to current infrastructure, additional personnel, resources or equipment for the duration of the construction process	Before and during construction	Mining Right Holder, Contractor, SAPS
Identification of potentially dangerous areas and sources of danger during construction process, e.g. on the construction site and off the construction site.	Before and during construction	Mining Right Holder, Contractor, SAPS
Monitoring safety and security profile in project area during the construction process Monitoring incidence of criminal activities especially in cases where construction personnel is involved	During construction	Contractor, SAPS

Target

- Securing the support of the SAPS during the construction process to ensure minimum disruption through potential increase in criminal activities due to the development intervention in the area.
- Inclusion of a Safety and Security method statement in the tender document by the Contractor.

6.2.16 Anti-poaching Collaboration strategy

6.2.16.1 Objectives

- Effectively collaborate with stakeholders to determine and minimize any contributing factor the mine development has on poaching activities

6.2.16.2 Outputs

- Participation in the strategies already implemented in the region to manage poaching
- Baseline and monitoring of poaching statistics through regular reporting
- Awareness creation

6.2.16.3 Activities

ACTIVITY	TIMEFRAME	RESPONSIBLE PARTIES
Participation in Community Policing Forum & Anti-poaching Initiatives, Patrols and Reporting and Evaluation	Before and during construction / operations	Mining Right Holder Stakeholder Engagement Manager Regional Organisations involved in anti-poaching

6.2.16.4 Target

- Improvement of awareness amongst local communities regarding the importance of conservation
- Collaboration with local stakeholders to manage and combat increases in poaching

6.2.17 Archaeological and Heritage Strategy

6.2.17.1 Objectives

- To abide by the requirements of the National Heritage Resources Act No. 25 of 1999 and the
- National Monuments Act No. 28 of 1969.
- To ensure that any social consequences related to the exhumation and reburial of skeletal remains from the graves in the project area are sensitively managed.
- To manage the impact on scattered archaeological artefacts, building ruins in the proposed project area either through protection or salvage operations
- To ensure that if archaeological finds are made during the construction excavations, the contractor will follow proper agreed procedures to minimise damage and effect salvage operations of archaeological findings

6.2.17.2 Outputs

- Effect archaeological salvage programme if required (including mapping, collection and safe- keeping of finds)

- Effect proper exhumation and reburial programme of graves in the project area in terms of the Resettlement, Compensation and Mitigation Strategy

6.2.17.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Undertake Archaeological and Heritage Impact Assessment of impacted project area	Before construction	Mining Right Holder, EMP consultants
Mapping and photographic record of significant finds and sites and other archaeological sites	Before and during construction	Mining Right Holder, EMP consultants
Identification and Consultation with next-of-kin of affected graves Advertising intent to exhume and rebury affected graves	Before construction	Mining Right Holder, Contractor
Identification and approval of exhumation and reburial process, identification of suitable reburial site in consultation with relevant stakeholders and next of kin	Before construction	Mining Right Holder, Local Government, relevant Government Departments, next-of-kin of graves

6.2.17.4 Targets

- Mapping of affected archaeological sites and finds before construction
- Compilation of Grave Register in time to exhume affected graves before construction commences
- Identification of suitable cemetery site, exhumation and reburial of affected graves before construction commences
- Salvaging archaeological artefacts before (and during if applicable) construction commences
- Identify appropriate storage and exhibition space for archaeological finds upon completion of salvage operations, usually the closest museum or library

6.2.18 Social Monitoring and Evaluation Strategy

6.2.18.1 Objectives

- To ensure that all the activities listed in the social strategies are implemented to support the achievement thereof.
- To monitor, review and adapt social implementation strategies if and when required
- To ensure that the monitoring information is captured in structured and organised fashion, according to an agreed system by responsible parties, in order to ensure ex-post analysis of the data.
- Integration with ECO monitoring functions of the bio-physical and construction environments.

6.2.18.2 Outputs

- Drafting of Monitoring and Evaluation Policy
- Definition of a Conflict Resolution Procedure

- Implementation of corrective measures
- Compilation of Monitoring Reports to EMC and project proponent

6.2.18.3 Activities

ACTIVITIES	TIMEFRAME	RESPONSIBLE PARTIES
Compile Monitoring and Evaluation Policy and Procedures Definition of Conflict Resolution Procedure	Before construction	Mining Right Holder, Social Scientist, EMC, Engineer, Contractor
Define monitoring role and functions of the EMC with regards to various project components, e.g. social aspects, bio-physical environmental aspects, construction issues etc.	Before and during construction	Mining Right Holder, EMC
Design and implementation of monitoring and evaluation methodologies (e.g. checklists, PRA etc.)	Before and during construction	Mining Right Holder, Social Scientist, EMC
Design and implementation of a Complaint Register	During construction	Mining Right Holder, Social Scientist, EMC
Drafting of regular process and compliance monitoring reports Timeous implementation of corrective measures based on recommendations from process and compliance monitoring reports	During and after construction	Mining Right Holder, Social Scientist, EMC

6.2.18.4 Targets

- Efficient and effective project management
- Timeous information flow to support decision-making processes
- Triangulation of monitoring data

7 CONCLUSIONS AND RECOMMENDATIONS

The Duel Project has the potential to significantly enhance the standard of living of those directly affected as well as of the population in the Makhado Local Municipal area in terms of employment, skills development, creation of small businesses and social development. These impacts are particularly important in an area where poverty is endemic and employment opportunities are few. Expectations of job opportunities and development projects are high amongst local residents. It is very important to develop a strategy of equitable distribution of job opportunities and benefits amongst the affected parties. The skills base in the area is low. In order to optimise local employment opportunities skills development will be necessary. Particular attention will need to be given to women and the youth.

The project will cause negative impacts which need to be managed. An influx of job seekers to the area potentially leading to prostitution and HIV/AIDS, increases in crime, prices of goods and services increasing, increased stress on local social services and land use are impacts that are particularly difficult to manage, because the Project does not have direct control over these and will need to work in collaboration with other stakeholders to minimize the impacts, realizing that full mitigation is not possible. Potential loss of livelihoods and other assets also needs to be considered. Subiflex is committed to minimize resettlement and has committed to a fair and transparent Resettlement Action Plan and Stakeholder Engagement Plan to mitigate the loss of assets and livelihoods.

The objective of the project should be to establish and manage a balance between the benefits created and the mitigation, management and compensation for losses of the Duel Project. If Authorities, in reviewing the report, makes an affirmative decision, continuous management, monitoring and evaluation of social impacts must be implemented to ensure the effectiveness of the mitigation measures and management strategies.

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- Limpopo Provincial Growth and Economic Development Strategy
- Vhembe and Makhado Spatial Development Framework
- Makhado Integrated Development Plan