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Proposed Dalyshope Coal Mining Project, situated in the Magisterial District of Lephalale, Limpopo Province

Social Impact Assessment (SIA)

Prepared for:
Anglo Operations (Pty) Ltd

Project Number:
UCD 6170

December, 2020

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Report Type:	Proposed Dalyshope Coal Mining Project, situated in the Magisterial District of Lephalale, Limpopo Province
Project Name:	Social Impact Assessment (SIA)
Project Code:	UCD 6170

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DETAILS AND DECLARATION OF THE SPECIALIST

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I, ___**Janet Mkhabela**_____, declare that: –

- I act as the independent specialist in this application.
- I will perform the work relating to the application in an objective manner, even if this results in views and findings that are not favourable to the applicant.
    - I declare that there are no circumstances that may compromise my objectivity in performing such work.
    - I have expertise in conducting the specialist report relevant to this application, including knowledge of the Act, Regulations and any guidelines that have relevance to the proposed activity.
- I will comply with the Act, Regulations and all other applicable legislation.
- I have no, and will not engage in, conflicting interests in the undertaking of the activity.
- I undertake to disclose to the applicant and the competent authority all material information in my possession that reasonably has or may have the potential of influencing - any decision to be taken with respect to the application by the competent authority; and - the objectivity of any report, plan or document to be prepared by myself for submission to the competent authority.
- All the particulars furnished by me in this form are true and correct; and

- I realise that a false declaration is an offence in terms of regulation 48 and is punishable in terms of section 24F of the Act.

10 February 2021

Signature of the Specialist *Date*

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EXECUTIVE SUMMARY

Universal has appointed Digby Wells Environmental (hereinafter Digby Wells) as the Environmental Assessment Practitioner (EAP) to undertake environmental authorisations required for the proposed Dalyshope Coal Mining Project. The development of Dalyshope Coal Mining Project Anglo. Anglo is the holder of two Prospecting Rights approved by the Department of Mineral Resources and Energy (DMRE) (reference numbers LP 30/5/1/1/2/10648 PR, as renewed, and LP 30/5/1/2/2/10649 PR, as renewed), and authorised in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) to prospect for coal on an area of 4957.7 hectares (ha). The Prospecting Rights cover numerous farm portions, the boundaries of which have since been realigned and renamed. The main infrastructure associated with the mine includes, but is not limited to:

- Contractors laydown yard;
- Temporary stockpiles for construction
- Temporary PCD for construction
- Opencast 1 (“OC1”) pit
- ROM stockpiles
- Slew product stockpiles
- Discard facility
- Topsoil and subsoil stockpiles
- Overburden (Hards/Softs) stockpiles
- Weighbridges
- Conveyers belts
- Workshop
- Two PCDs
- Washing plant
- Crush and Screen plant
- Offices
- Change-house
- Stores
- Laboratory
- Laundry facility
- Water tanks
- Potable water Pipeline and distribution
- Dirty water pipeline;
- Sewage Treatment Plant
- Water Treatment Plant
- Brine Pond
- Diesel/wash bay and oil separator
- Explosives magazine
- Stormwater management infrastructure
- Powerline/s
- Substation
- Rail link and Rail loadout facility
- Brake-test ramp
- LDV and light vehicle access road
- Truck access road
- Road upgrade (Steenbokpan to site)

Study Constraints

Due to the national hard lockdown associated with COVID-19, stakeholder's reluctance to hold one-to-one meetings after the easing of the lockdown, their non-responsiveness to emails communication (with short social questionnaires) and telephonic interviews consultation - only a limited number of stakeholders were consulted as part of the social specialist study. Stakeholders consulted included the directly affected landowner (the farmer currently leasing the farms Dalyshope and Klaarwater), and representatives from the Lesedi community who were interviewed as part of the Social and Labour Plan (SLP) at the beginning of 2020.

The primary data used in the report is limited and based on questions that the participants were willing to respond. Recurring social related comments and issues raised by the landowners and other stakeholders have been reflected in the SIA and addressed accordingly where applicable (refer to Section 7).

Study Areas

Areas of that are likely to experience Project impacts were identified and categorised as follows:

- Direct area of impact (or the primary study area) which is an area likely to experience the most Project effects (positive and negative) due to their proximity to the Project footprint. This area encompasses farms adjacent to the Project area (Farms Dalyshope and Klaarwater) and the community of Lesedi within Ward 3.
- Indirect area (or the secondary study area) of impact which is an area likely to experience some Project impacts including economic pull exerted by the Project. It is comprised of Waterberg District Municipality (WDM); Lephalale Local Municipality (LLM) and broader Ward 3.
- Induced areas of impact (or the regional study area) which are areas likely to experience Project impacts regardless of their geographical proximity to the Project area; for example, increased spending in the economy thus decreased demand for goods and services; therefore, some industries needing to employ more people to meet the demand for services and goods. This area encompasses the entire Limpopo Province.

Baseline Conditions

The 2011 Census reported the population of the Province at 5,404,868 people (or 10% of the total population of South Africa). In turn, the WDM was the least populated of the Provincial district municipalities with a population of 679,336 people (or 13% of the total provincial population). Within WDM, LLM had the second largest population (118,865 people or 18% of the total WDM population).

The most predominant age groups across the study areas are people of economically active groups (i.e., between 18 and 64 years of age). This provides an indication of the expected portion of the population that are of economically working age that might be available to take up employment opportunities within the study areas when measured against the study areas' employment rate and education levels.

The majority population is Black African, followed by the white population. The least found population groups are Indian/Asian and coloured; with the coloured population larger than the Indian/Asian population. Sepedi was the most spoken language within the broader study areas. The except is observed within Ward 3 whereby Afrikaans was the most spoken due to the area being dominated by White Afrikaans speakers.

An average of 12% of the population of the study areas have not attained any level of education, with the majority (17%) of illiterate persons found at a provincial level and followed by people at a WDM (12%). The mining, agriculture and tourism sectors are the main economic activities of the population.

On average, households in the study areas comprise of four (4) members. Half of the households at a provincial level are headed by females whilst an average of one percent (1%) of households are headed by children. The average household incomes is lowest at the provincial level and in Ward 3, depicting a monthly income of R4 800 or less. An average of five percent (or 5%) of individuals are without income across the study area. An average of 21% across the study areas earn an income between R9 6001 and R 38 400.

Primary study area

The primary study area (or Ward 3) is comprised of commercial farmers engaged in livestock, crop farming, and ecotourism and the community of Lesedi.

The farmer currently leasing the Project affected farms, co-owns one farm portion in the area. The main land uses of the farmland include cattle breeding and keeping and hunting. The farmer has five families currently working on the farms and one of these resides full-time on the farm.

The Steenbokpan/ Lesedi Community is located ~7 km from the proposed Project area and 46 km from Lephalale. The community was established in 2008 and are informal occupiers of vacant land owned by the South African Government (the Department of Education).

The community is said to comprise of 1,500 residents; spread across an estimated 300 households. According to the interviewees, ~70% of the population are females. Most of the households in the area are headed by women. An estimated 25% of the total population were as being youths, and the remaining population is comprised of a combination of middle-aged and elderly people. An estimated 15% of the community have completed Grade 12.

Summary of Social Impacts

Phase	Activity	Impacts	Rating (Pre-Mitigation)	Rating (Post Mitigation)
Construction	All Construction Activities	Creation of Employment Opportunities	Minor (positive)	Minor (positive)

Phase	Activity	Impacts	Rating (Pre-Mitigation)	Rating (Post Mitigation)
Construction	• Site/vegetation clearance'; • Temporary PCD; • Contractors laydown yard; • Access and haul road construction; • Infrastructure construction; • Diesel storage and explosives magazine; and • Topsoil stockpiling.	Opportunities and Capabilities within the Supply Chain	Minor (positive)	Moderate (positive)
Construction	All project related activities associated with construction and operations.	Change Sense of Place	Moderate (negative)	Minor (negative)
Construction	All project related activities associated with construction and operation.	Impacts associated with Population Influx	Moderate (negative)	Minor (negative)
Construction	All project related activities associated with construction and operation	Community unrest due to perceived lack of economic opportunities and unfulfilled promises.	Moderate (negative)	Minor (negative)
Operational	• Open pit establishment • Removal of rock (blasting) • Stockpiling (rock dumps, soft dumps, soils, ROM, product, discard dump) establishment and operation.	Creation of employment, work skills development and experience.	Minor (positive)	Moderate (positive)

Phase	Activity	Impacts	Rating (Pre-Mitigation)	Rating (Post Mitigation)
Operation	All project related activities associated with construction and operation.	Opportunities and Capabilities within the Supply Chain.	Minor (positive)	Moderate (positive)
Operational	All project related activities associated with construction and operation.	Multiplier effects on the local and regional economy.	Minor (positive)	Moderate (positive)
Operational	Water use and storage on-site – during the operation water will be required for various domestic and industrial uses.	Increased competition for water resources.	Major (negative)	Moderate (negative)
Operational	• Open pit establishment; • Removal of rock (blasting); and • Stockpiling (rock dumps, soft dumps, soils, ROM, product, discard dump) establishment and operation.	Potential economic impacts on eco-tourism operators and establishments.	Moderate (negative)	Moderate (negative)
Operational	Blasting	Impacts associated with Blasting on Neighbouring Landowners	Moderate (negative)	Minor (negative)
Operational	All project related activities associated with construction and operation.	Workforce health, safety, and security risks such as dust-induced occupational lung diseases and noise induced hearing loss	Moderate (negative)	Minor (negative)
Operational	All project related activities associated with construction and operation.	Social Development as part of the SLP.	Minor (positive)	Moderate (positive)

Phase	Activity	Impacts	Rating (Pre-Mitigation)	Rating (Post Mitigation)
Operation	All project related activities associated with construction and operation.	Impacts to community health safety and security.	Moderate (negative)	Moderate (negative)
Decommissioning	Decommissioning	Economic boom-bust after the construction and operation phases.	Moderate (negative)	Minor (negative)

Recommendations of the Specialist

From a socio-economic perspective, it is recommended that the proposed Project proceed. This recommendation is however subject to the following conditions:

- The mitigation and enhancement measures listed for each impact, negative and positive, must be implemented; especially those relating to:
  - Impacts on ecotourism operators and establishments.
  - Water supply and increased competition thereof.
  - Impacts associated with blasting on neighbouring landowners; and
  - Potential in-migration into the settlement of Lesedi.
- A social management plan and social monitoring plan must be developed to manage and monitor the implementation of these measures and recommend corrective measures, where necessary; and
- Implement mitigation measures recommended in other specialist studies, including traffic, dust, blasting, ground and surface water and others, that are likely to have socio-economic impacts.

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ACRONYMS, ABBREVIATIONS AND DEFINITION

CDP	Community Development Plan
Covid-19	Coronavirus
EIA	Environmental Impact Assessment
EMPr	Environmental Management Program
HSE	Health, Safety and Environment
IDP	Integrated Development Plan
IFC	International Finance Corporation
LDVs	Light Delivery Vehicles
LED	Local Economic Development Plan
LLM	Lephalale Local Municipality
MPRDA	Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002)
MRA	Mining Rights Area
MTIS	Mineable tonnes in-situ
NEMA	National Environmental Management Act, 1998 (Act No. 107 of 1998)
NEA	Not economically active
NMT	Non-Monitored Transport
OHS	Occupational Health and Safety
PCD	Pollution Control Dam
PPE	Personal Protective Equipment
SIA	Social Impact Assessment
SLP	Social and Labour Plan
WDM	Waterberg District Municipality

Legal Requirement		Section in Report
(1)	A specialist report prepared in terms of these Regulations must contain-	
(a)	details of- (i) the specialist who prepared the report; and (ii) the expertise of that specialist to compile a specialist report including a curriculum vitae;	Page ii Appendix B
(b)	a declaration that the specialist is independent in a form as may be specified by the competent authority;	Page ii
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	Section 5.1
cA	And indication of the quality and age of the base data used for the specialist report;	Section 4
cB	A description of existing impacts on site, cumulative impacts of the proposed development and levels of acceptable change;	Section 8
(d)	The duration, date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 6.1
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process inclusive of the equipment and modelling used;	Section 5
(f)	Details of an assessment of the specific identified sensitivity of the site related to the proposed activity or activities and its associated structures and infrastructure inclusive of a site plan identifying site alternative;	Section 8
(g)	an identification of any areas to be avoided, including buffers;	-
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 5.2
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 4
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity or activities;	Section 6.1 to Section 8.4
(k)	any mitigation measures for inclusion in the EMPr;	Section 9
(l)	any conditions/aspects for inclusion in the environmental authorisation;	Section 11
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation;	Section 10

Legal Requirement		Section in Report
(n)	a reasoned opinion (Environmental Impact Statement) -	Section **Error! Reference source not found.**
	whether the proposed activity, activities or portions thereof should be authorised; and	Section **Error! Reference source not found.**
	if the opinion is that the proposed activity, activities, or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 11
(o)	a description of any consultation process that was undertaken during the course of preparing the specialist report;	Section 5.3
(p)	a summary and copies of any comments received during any consultation process and where applicable all responses thereto; and	Section 7
(q)	any other information requested by the competent authority.	-

1 Introduction

1.1 Project Background

Universal has appointed Digby Wells Environmental (hereinafter Digby Wells) as the Environmental Assessment Practitioner (EAP) to undertake environmental authorisations required for the proposed Dalyshope Coal Mining Project. The development of Dalyshope Coal Mining Project Anglo. Anglo is the holder of two Prospecting Rights approved by the Department of Mineral Resources and Energy (DMRE) (reference numbers LP 30/5/1/1/2/10648 PR, as renewed, and LP 30/5/1/2/2/10649 PR, as renewed), and authorised in terms of the Mineral and Petroleum Resources Development Act, 2002 (Act No. 28 of 2002) (MPRDA) to prospect for coal on an area of 4957.7 hectares (ha). The Prospecting Rights cover numerous farm portions, the boundaries of which have since been realigned and renamed. The proposed Mining Right boundary will include the following farms, as captured in the Prospecting Rights:

- Buurmanshulp 136 LQ
- Bergen Op Zoom 188 LQ
- Greenwich 113 LQ (is now Greenrust 708 LQ)
- Gaylad 208 LQ
- Rooiboslaagte 144 LQ
- Hilton 190 LQ
- Stellenbosch 203 LQ
- Surrey 18 LQ
- Virginia 6 LQ
- Vryplaats 163 LQ
- Canada 229 LQ (now subdivided into Canada and Matopi 705 LQ)
- Dalyshope 232 LQ (a Portion of Dalyshope 232 was subdivided to form Nazarov 685 LQ)
- Wynberg 215 LQ
- Boompan 237 LQ
- Breda 147 LQ (Portion now known as Beska 180 LQ)
- Ecarte 156 LQ
- Fairfield 154 LQ (Portion 1, 2 and RE)
- Kromhoek 193 LQ (Portion 1 and RE)
- Lhea 437 LQ (Portion 1, 2 and RE)
- Vucht 436 LQ (Portion 1, 4 and RE)
- Weltevreden 200 LQ (Portion 1 and RE)
- Wolvendraai 481 LQ
- Constantia 122 LQ (as subdivided to form a Portion of Fig Tree 716 LQ)
- Klaarwater 231 LQ (a Portion of Klaarwater 231 was subdivided to form Nazarov 685 LQ)

Anglo proposes to develop a coal mine and the proposed mining activities will take place on the Farms Dalyshope 232 LQ and Klaarwater 231 LQ. The Environmental Authorisation application will therefore focus on these two properties only for this phase of the Project.

This application considers the establishment of a contractor operated truck and shovel opencast mine, producing approximately 2.4 million tonnes per annum (Mtpa) of thermal coal product for five (5) years. After five years, the mine will ramp up production to approximately 12 Mtpa of product for approximately 25 years from a single open pit, giving a total Life of Mine (LoM) of approximately 30 years. For the report, the following terms apply:

- **Mining Right area** defines the farms included in the Mining Right boundary.
- **Project area** defines farm portions directly affected by mining and mining-related infrastructure i.e., Dalyshope and Klaarwater.
- **Study Area** will be determined by each specialist and the zone of influence in terms of potential impact the Project area will have, relevant to the individual specialist fields.

1.2 Geographical Setting

The Project is located within the Limpopo Province. The Province lies adjacent to the Limpopo River and shares borders with Botswana, Zimbabwe, and Mozambique. The Province is divided into five District Municipalities namely Waterberg, Capricorn, Vhembe, Mopani, and Sekhukhune. Of these, Waterberg District Municipality (WDM) is the largest district municipality in terms of land size, comprising 36% of the total provincial land area. The WDM is itself divided into five (5) local municipalities, of which the Lephalale Local Municipality (LLM) is the largest in terms of land size (Wazimap, 2017).

The proposed Project is further situated within the Waterberg Coalfield which is the largest deposit of coal in the Ellisras Basin of South Africa. The area is undeveloped and its characterised by minimally-disturbed Bushveld with game and livestock farming, hunting as well as ecotourism. Human activity in proximity to the Project area includes farmhouses, game lodges, farmworker accommodation and cattle kraals.

The settlements nearest the Project include Makoba (15 km to the northwest and in Botswana), and Steenbokpan (19 km to the south). An informal settlement (Lesedi Tshukudu) is located adjacent to Steenbokpan. The nearest major town is Lephalale, which is approximately 60 km east of the Project area.

2 Project Description

2.1 Mineral Deposit and Resource Reserve

The applicant intends to develop a coal mine in the Waterberg area on the farms Klaarwater 231 LQ and Dalyshope 232 LQ. The quantity of coal to be extracted from the proposed pit is approximately 2.4 million tonnes per annum (Mtpa) of thermal coal product for approximately five years. After five years, the mine will ramp up production to approximately 12 Mtpa of product for approximately 25 years from a single open pit (OC1), giving a total Life of Mine (LoM) of approximately 30 years. The coal product will be sold to various markets.

2.2 Mining

Opencast strip mining using selective mining techniques is proposed for extracting the resource. The mine will be accessed via a boxcut and ramp arrangement located in the north-eastern corner of the farm Dalyshope. Overburden material will be hauled to spoil until such time as sufficient void has been created within the pit to allow for in-pit tipping. Selective mining

of the coal seams is not required due to the specification of the product required but selective mining of the partings will be conducted.

ROM coal from the pit will be crushed in a primary crusher at the pit head. The crushed coal will be transported by conveyor belt from the pit head to stockpiles before the washing plant. Coal will be removed from the stockpile and fed into the plant. The coal will be screened to remove -50mm coal. The oversize coal will be crushed in a secondary crusher before re-joining the -50mm coal. The -50mm coal is fed into the cyclone plant whereby it will be washed at a density of 1.80 to produce product and discard. The washing plant will be in modular format, with two modules each capable of a throughput of 1,000 tons per hour.

The discard will be taken by conveyor belt back to the pit head where it will be loaded into trucks to be deposited back into the bottom of the pit.

The product will be placed on stockpiles before being transported to market. The product will either be transported by road haulers on the district/provincial road or by means of a rail line, should the latter prove economically viable. The main infrastructure associated with the mine includes, but is not limited to:

Table 2-1: Infrastructure associated with the Mine

- Contractors laydown yard;
- Temporary stockpiles for construction
- Temporary PCD for construction
- Opencast 1 (“OC1”) pit
- ROM stockpiles
- Slew product stockpiles
- Discard facility
- Topsoil and subsoil stockpiles
- Overburden (Hards/Softs) stockpiles
- Weighbridges
- Conveyers belts
- Workshop
- Two PCDs
- Washing plant
- Crush and Screen plant
- Offices
- Change-house
- Stores
- Laboratory
- Laundry facility
- Water tanks
- Potable water Pipeline and distribution
- Dirty water pipeline;
- Sewage Treatment Plant
- Water Treatment Plant
- Brine Pond
- Diesel/wash bay and oil separator
- Explosives magazine
- Stormwater management infrastructure
- Powerline/s
- Substation
- Rail link and Rail loadout facility
- Brake-test ramp
- LDV and light vehicle access road
- Truck access road
- Road upgrade (Steenbokpan to site)

2.3 Proposed Infrastructure and Activities

The proposed Project activities per Project phase are indicated in Table 2-2 below.

Table 2-2: Project Phases and Associated Activities

Project Phase	Project Activity
Construction Phase	Site/vegetation clearance
	Temporary PCD
	Contractors laydown yard
	Access and haul road construction
	Infrastructure construction
	Diesel storage and explosives magazine
	Topsoil stockpiling
Operational Phase	Open pit establishment
	Removal of rock (blasting)
	Stockpiling (rock dumps, soft dumps, soils, ROM, product, discard dump) establishment and operation
	Diesel storage and explosives magazine
	Operation of the open pit workings
	Operating crush and screen and coal washing plant
	Operating sewage treatment plant and water treatment plant
	Water use and storage on-site – during the operation water will be required for various domestic and industrial uses. Water Management infrastructure including Two Pollution Control Dams (PCDs) will be constructed that capture water from the mining area, which will be stored and used accordingly. Workshop and storage of chemicals. Laundry and Laboratory services. Backfilling and concurrent rehabilitation. Weighing of coal trucks. Coal transportation through trucking, rail, and conveyer belts. Washing of mine vehicles; and Fuelling of diesel on site.
	Storage, handling and treatment of hazardous products (including fuel, explosives, and oil) and waste
	Maintenance activities – through the operations maintenance will need to be undertaken to ensure that all infrastructure is operating optimally and does not pose a threat to human or environmental health. Maintenance will include haul

Project Phase	Project Activity
	roads, crushing and washing plant, machinery, water and stormwater management infrastructure, stockpile areas, dumps, etc.
Decommissioning Phase	Demolition and removal of infrastructure – once mining activities have been concluded infrastructure will be demolished in preparation of the disturbed land rehabilitated
	Rehabilitation – rehabilitation consists of spreading of the preserved subsoil and topsoil, profiling of the land and re-vegetation
	Post-closure monitoring and rehabilitation

3 Relevant Legislation, Standards and Guidelines

The Social Impact Assessment has been completed in terms of NEMA Environmental Impact Assessment (EIA) Regulations, 2014 (as amended) Appendix 6: Specialist Reports. Where applicable, the Report uses references from the International Finance Corporation's (IFC) Performance Standards.

4 Assumptions, Limitations and Exclusions

The constraints and limitations to the impact assessment are presented in Table 4-1 below.

Table 4-1: Applicable Constraints and Limitations and their Consequences

Constraint or Limitation	Consequence
Due to the national hard lockdown associated with COVID-19, stakeholder's reluctance to hold one-to-one meetings after the easing of the lockdown, their non-responsiveness to emails communication (with short social questionnaires) and telephonic interviews consultation - only a limited number of stakeholders were consulted as part of the social specialist study. Stakeholders consulted included the directly affected landowner (the farmer currently leasing the farms Dalyshope and Klaarwater), and representatives from the Lesedi community who were interviewed as part of the Social and Labour Plan (SLP) at the beginning of 2020.	The primary data used in the report is limited and based on questions that the participants were willing to respond. Recurring social related comments and issues raised by the landowners and other stakeholders have been reflected in the SIA and addressed accordingly where applicable (refer to Section 7).

Constraint or Limitation	Consequence
The report used secondary data that was drawn from Census 2011 as the last official census and Community Survey 2016. Data from the latter is only available on municipal level (i.e., not always at the ward level). It must be further noted that since 2001, the ward boundaries within LLM have continually changing. For example, the Project would have been in Ward 1 in 2000 if this study were undertaken in 2006 or 2009 and in Ward 2. In addition, due to travel restrictions and other COVID-19 related regulations, the data could not be augmented with primary data in the form of interviews and a site visit.	This has implications for the socio-economic data as the shapes, sizes, population of the wards have changed, and the past datasets aggregated to ward level are not readily compatible.
A socio-economic survey was not conducted with households located in primary study (Ward 3) area. Instead, the socio-economic indicators were derived from official census data, on ward level, where available (2011; 2016).	Some of the data used on this report may be outdated owing to the last official census conducted in 2011 and 2016.

5 Methodology

This Section provides a description of the study terms of reference and methodology.

5.1 Terms of Reference

The Terms of Reference (ToR) for the study are to:

- Describe the baseline socio-economic characteristics of the proposed Project area and surrounding areas.
- Identify, describe, and assess the expected significance of potential socio-economic impacts that may arise because of the proposed Project.
- Recommend appropriate mitigation measures and management actions to avoid or minimise potential negative impacts, and to enhance the positive impacts associated with the proposed Project.

5.2 Definition of Study Areas

The (IFC) defines a study area as “an area that is likely to experience impacts arising from, or exert influence on, the Project or activity being assessed”. Three interdependent study areas were identified for the purposes of this study and correspond, where relevant, to the existing administrative boundaries. The study areas were derived through a mapping exercise considering settlements in relation with Project footprint and its associated buffer areas.

Subsequently, areas of that are likely to experience Project impacts were identified and categorised as follows:

Direct area of impact (or the **primary study area**) which is an area likely to experience the most Project effects (positive and negative) due to their proximity to the Project footprint. This area encompasses farms adjacent to the Project area (Farms Dalyshope and Klaarwater) and the community of Lesedi within Ward 3.

Indirect area (or the **secondary study area)** of impact which is an area likely to experience some Project impacts including economic pull exerted by the Project. It is comprised of Waterberg District Municipality (WDM); Lephalale Local Municipality (LLM) and broader Ward 3 as depicted in Figure 5-2.

Induced areas of impact (or the **regional study area**) which are areas likely to experience Project impacts regardless of their geographical proximity to the Project area; for example, increased spending in the economy thus decreased demand for goods and services; therefore, some industries needing to employ more people to meet the demand for services and goods. This area encompasses the entire Limpopo Province as shown in Figure 5-3.

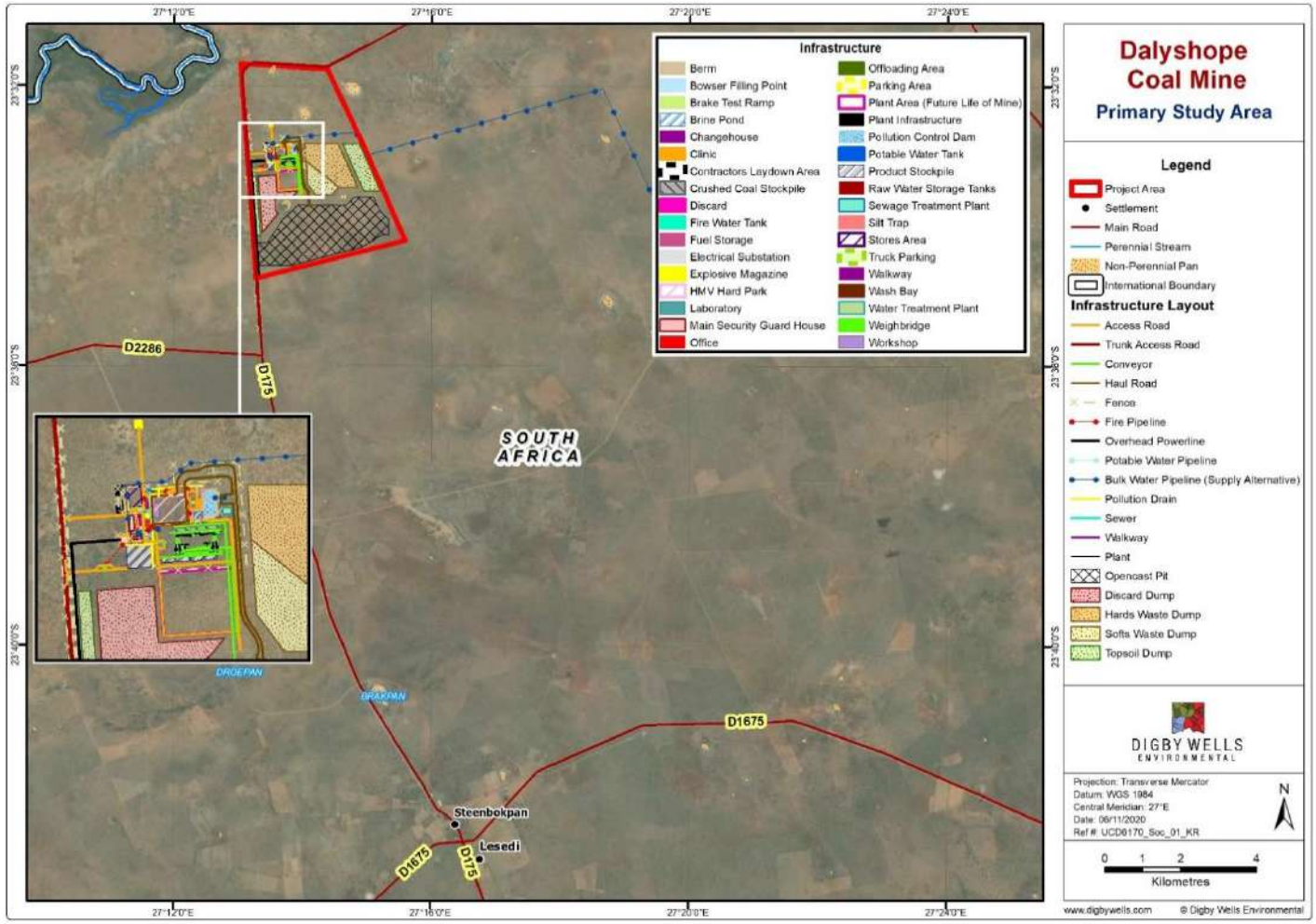

Figure 5-1: Primary Study Area

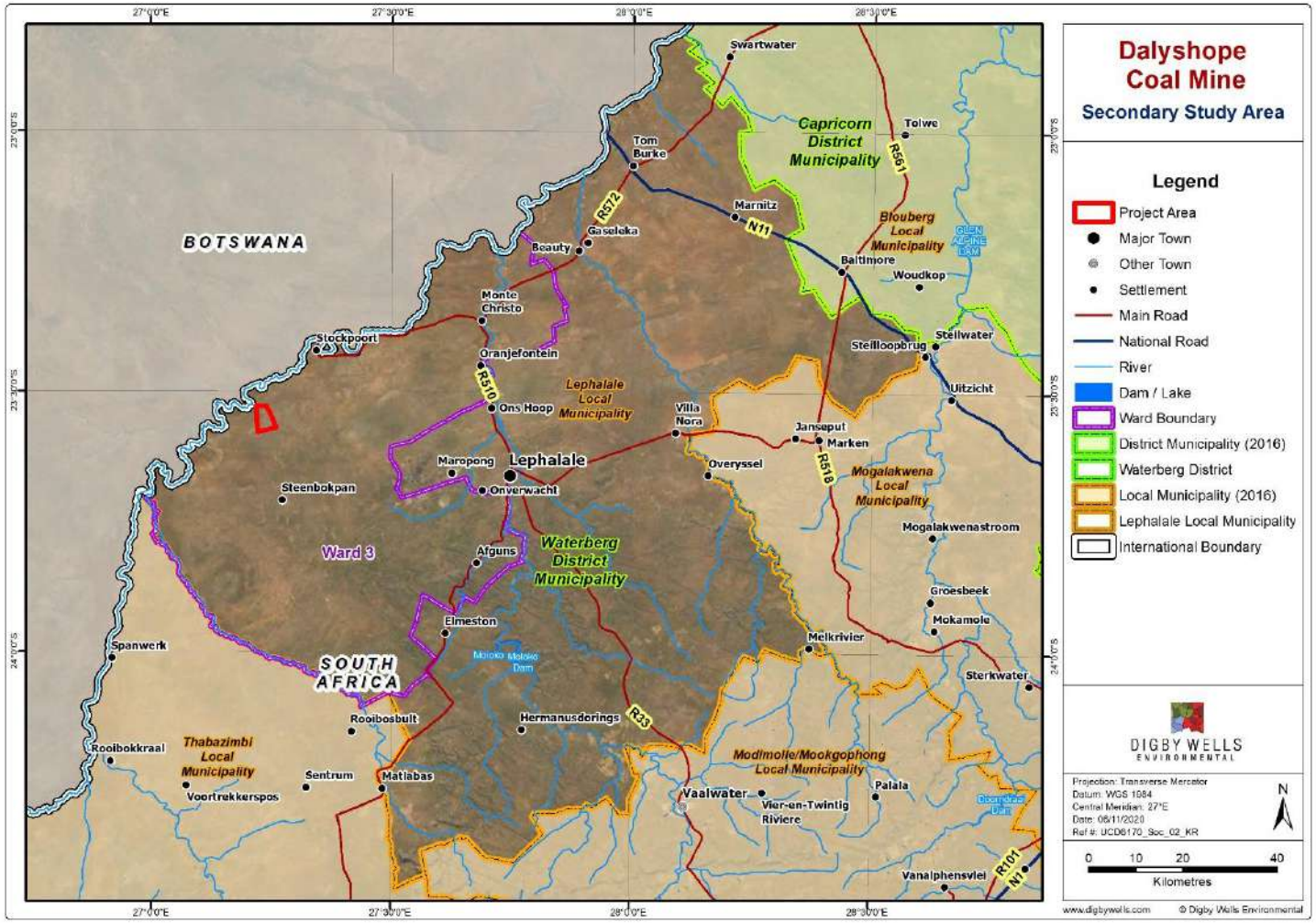

Figure 5-2: Secondary Study Area

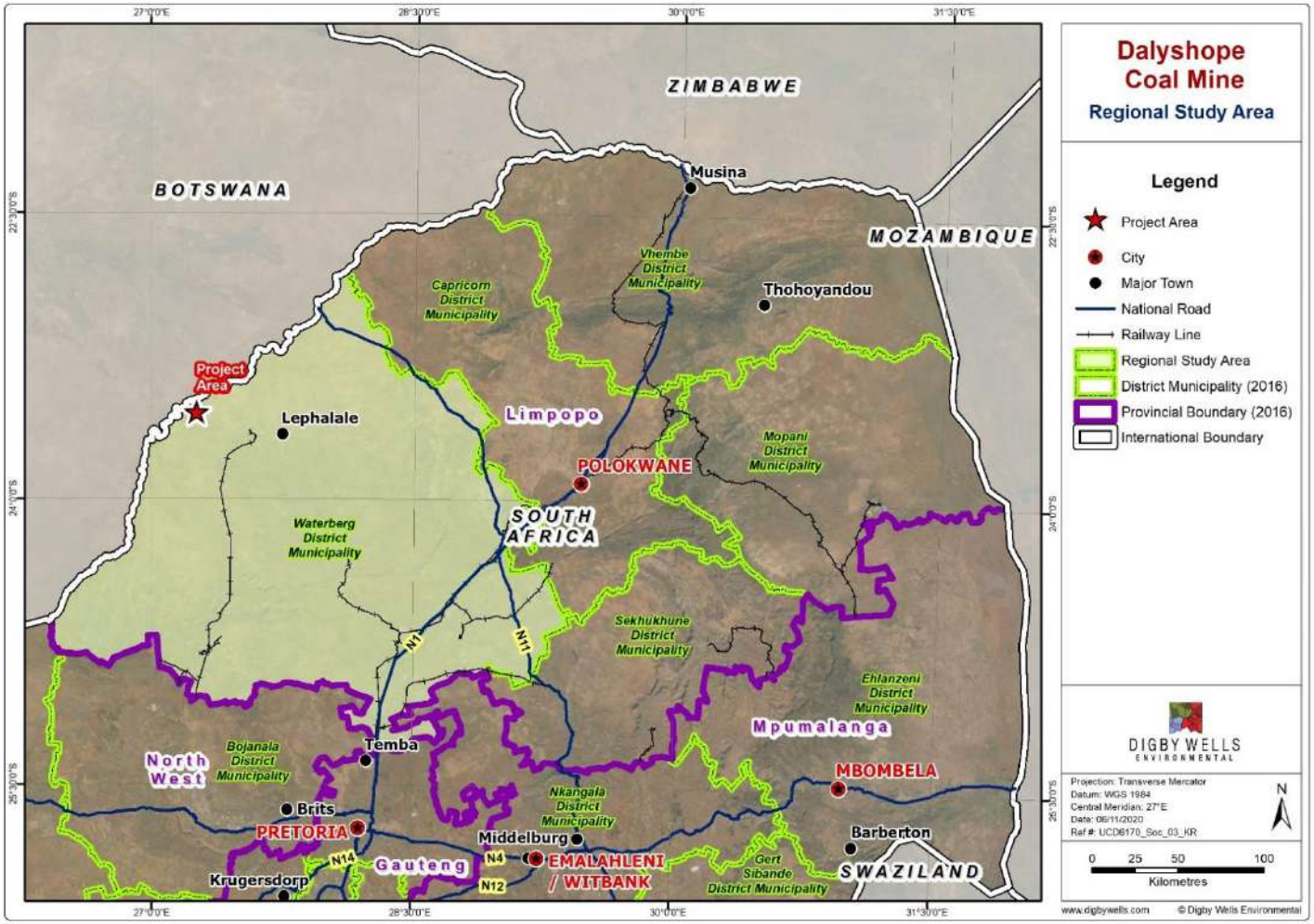

Figure 5-3: Regional Study Area

5.3 Data Collection

The information presented in this report was obtained through the following data collection methods.

5.3.1 Secondary Data Collection

A desktop review of available documents to obtain relevant socio-economic baseline information on the defined study areas. Documents reviewed include:

- Provincial reports, district and local municipal IDPs and Local Economic Development (LED) Plans.
- StatsSA census data from Wazimap (2019) as the primary source of desktop data to prepare the baseline socio-economic profiles of potentially affected areas.
- Previous studies and reports concerning the proposed Project, specifically the Environmental and Socio-Economic Scoping report and SLP compiled for the proposed Project.
- Available maps and satellite imagery.

5.3.2 Primary Data Collection

This impact assessment was informed by the primary data collected by Digby Wells during site visits for the following:

- One-on-one meetings with the directly affected farmers/ landowners during the Scoping Phase engagements (July 2020).
- Stakeholder comments received during the Scoping Phase of public participation process (July 2020).
- Focus group discussions and interviews conducted with communities located within the primary study area as well as local municipal authorities for the development of the SLP (February 2020).

5.3.3 Compilation of the Baseline Profile

Based on information gathered through the desktop review and limited primary data a baseline profile was compiled and has been categorised as follows:

- Baseline conditions within the regional and secondary study areas
    - Population demographics
    - Economic and livelihood activities
    - Labour force and employment
    - Household characteristics
    - Household access to public services and infrastructure

- Baseline conditions within the primary study area:
  - Commercial farmers
  - Opinions and views of other farmers in the area
  - Steenbokpan/ Lesedi community

5.3.4 Analysis and Reporting

The assessment of the socio-economic impacts identified for the proposed Project is based on an impact rating process designed to provide a numerical rating of the significance of each impact. The significance rating process follows the established impact / risk assessment formula where significance is a function of the consequence of an event multiplied by the probability of its occurrence. A detailed description of the impact assessment methodology used is presented in Appendix A.

The following steps were undertaken as part of the impact assessment:

- Impact identification and assessment: Based on the anticipated interaction between specific and / or collective Project activities and baseline socio-economic conditions, several potential impacts were identified for each phase of the Project.
- Impact mitigation: realistic measures were developed aimed at mitigating, and if possible, avoiding the negative social impacts, and enhancing the benefits of positive social impacts.

6 Findings and Discussion

6.1 Socio-economic Profile of the Study Areas

This Section presents the socio-economic characteristics of the regional, secondary, and primary study areas.

- The regional and secondary study areas are presented comparatively with the information presented in tables and figures depicting data trends.
- The socio-economic characteristics of the primary study area are described in a stand-alone subsection – focused on the Project site and the community residing near the Project site namely the informal settlement of Lesedi.

6.2 Baseline Conditions within the Regional and Secondary Study Areas

6.2.1 Population Demographics

The 2011 Census reported the population of the Province at 5,404,868 people (or 10% of the total population of South Africa). Within the Province, the Vhembe District Municipality comprised of the largest district municipality in terms of land area and population size (with 1 294,722 people). In turn, the WDM was the least populated of the Provincial district

municipalities with a population of 679,336 people (or 13% of the total provincial population). Within WDM, LLM had the second largest population (118,865 people or 18% of the total WDM population).

Ward 3 covers an extensive area; most of which is rural in nature and includes the Medupi Power Station, a portion of the Grootegeluk Coal Mine and several airstrips. There are no major towns within this Ward. This notwithstanding, the Ward had a large population of 10 836 people compared to the other wards within the LLM. According to the WDM IDP the LLM experienced significant population decreases between 2005 and 2007; this was attributed to out-migration of people in search of economic opportunities within the Province and elsewhere in the country. However, an inverse situation was observed between 2011 and 2016 whereby the population of LLM grew significantly from 3% to 18%. The increase in the population was due to the growth of the energy and mining sectors and specifically the of the energy construction of Medupi Power Station. A summary of the population characteristics for the study areas are depicted in Table 6-1.

Table 6-1: Population Characteristics

Study Area:	Regional	Secondary		
Statistics (2011)	**Limpopo**	**WDM**	**LLM**	**Ward 3**
Population	5 404 868	679 336	118 865	10 836
Land Area *(km^2)*	125 806.1	45 315.6	13 826.1	4 509.0
Population density *(person/km^2)*	43	15	9	2
Population growth rate	1%	1.2%	3.1%	-

6.2.1.1 Population Age Groups

The most predominant age groups across the study areas are people of economically active groups (i.e., between 18 and 64 years of age). This provides an indication of the expected portion of the population that are of economically working age that might be available to take up employment opportunities within the study areas when measured against the study areas' employment rate and education levels. Of the study areas, Ward 3 was reported to have the largest proportion of people of economically active ages compared to the provincial, district and local municipal levels. Furthermore, Ward 3 and LLM comprised of lower numbers of elderly people compared to the district and provincial levels. This may be attributed to increase in-migration of people into the area in search of economic opportunities associated with the energy and mining sectors at the time of census data collection. Table 6-2 provides an overview of the population the age groups within the study areas.

Table 6-2: Population Age Distribution by Location

Age Range	Limpopo		WDM		LLM		Ward 3	
	No.	%	No.	%	No.	%	No.	%
Under 18	2 216 457	41	242472	36	37 531	32	2 328	21
18 to 64	2 849 994	53	397 331	58	76 544	64	8 090	75
65 and over	338 417	6	39 534	6	4 789	4	417	4

6.2.1.2 *Racial Distribution of the Population*

The majority population is Black African, followed by the white population. The least found population groups are Indian/Asian and coloured; with the coloured population larger than the Indian/Asian population. The racial distribution of the population is depicted in Figure 6-1.

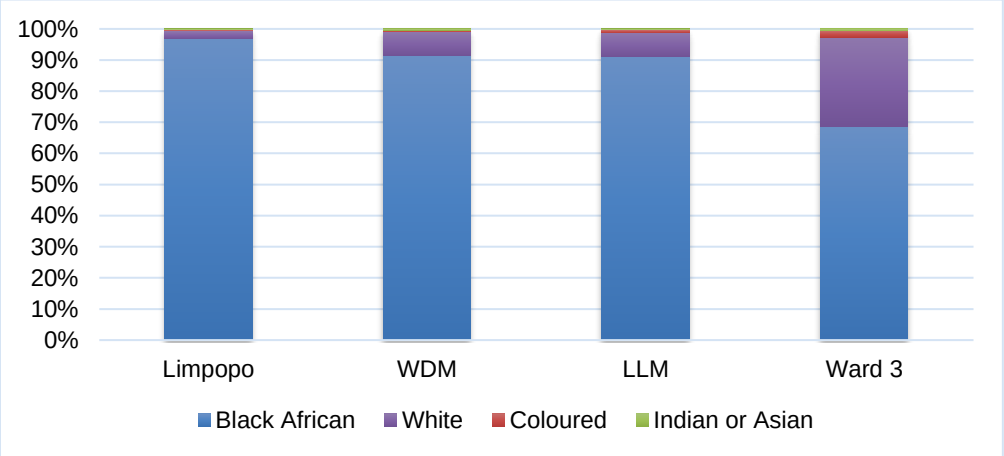

Figure 6-1: Racial Distribution of the Population in Percentages

6.2.1.3 *Gender Distribution of the Population*

The population within the study areas is comprised of mostly females compared to males. This may be attributed to out-migration of males leaving women to care for the household. Figure 6-2 presents the distribution with respect to gender within the population of the study areas.

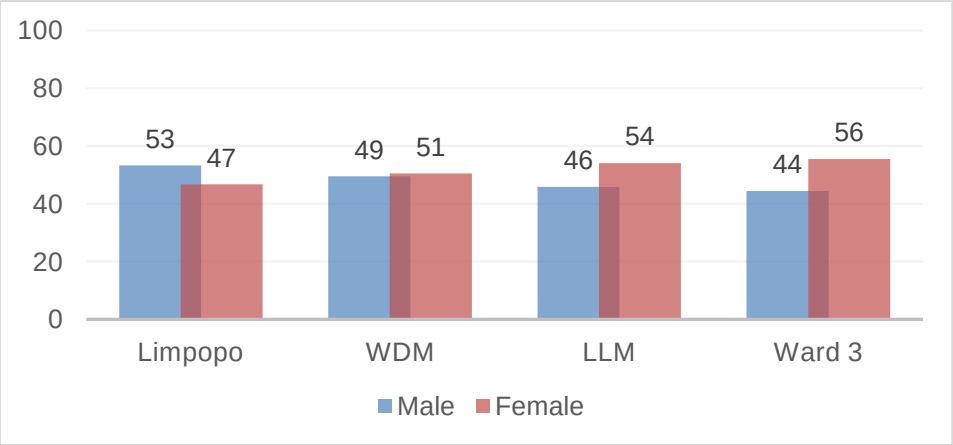

Figure 6-2: Gender Distribution in Percentages

6.2.1.4 Predominant Spoken Languages

From the provincial to the local municipality, Sepedi was the most spoken language within the broader study areas. The except is observed within Ward 3 whereby Afrikaans was the most spoken due to the area being dominated by White Afrikaans speakers. Across the study areas English is amongst the least spoken languages. Other predominant languages include Xitsonga and Setswana which are dominant in the LLM and Ward 3.

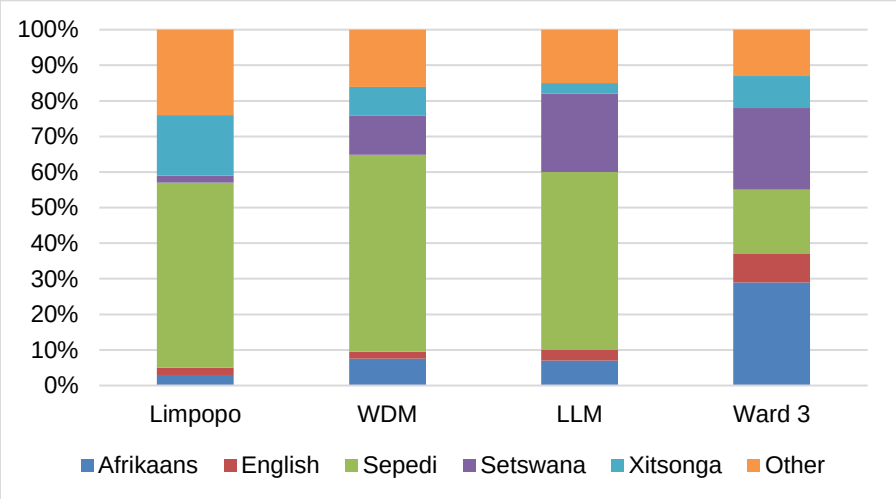

Figure 6-3: Predominant Spoken Languages

6.2.1.5 Education Levels of the Population +20 years and Older

An average of 12% of the population of the study areas have not attained any level of education, with the majority (17%) of illiterate persons found at a provincial level and followed by people at a WDM (12%). LLM reported the highest proportion of the population with higher education, followed by LLM and Ward 3 population as shown in Figure 6-4.

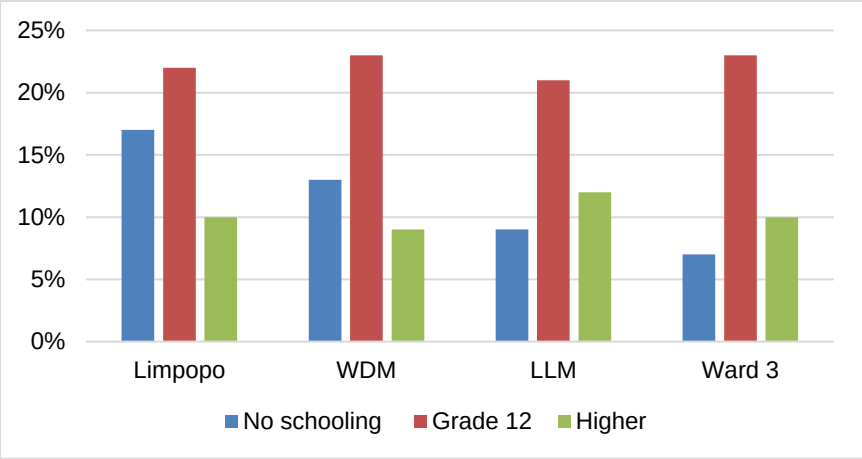

Figure 6-4: Level of Education of the Population +20 years

6.2.2 Economic and Livelihood Activities

The key sectors contributing to the Provincial economy include mining, agriculture, and tourism as highlighted in Table 6-3.

Table 6-3: Main Economic Sectors within the Regional and Secondary Study Areas

Mining	Agriculture	Tourism
• Beneficiation • Mining Tourism • Platinum Corridor • Mining logistic hub	• Game farming • Agro-processing • Meat and horticulture Cluster • Agro-tourism	• Tourism transport operators • Tour operators • Business tourism • Theme parks and recreational facilities

6.2.2.1 Mining Sector

Mining activities within the Province centre around Mokopane, Lephalale and the Northam-Thabazimbi area. Minerals mined include platinum-group metals, iron ore, high and middle-grade coking coal, diamonds, gold, emeralds, amongst others. The province is a typical developing area, exporting primary products and importing manufactured goods and services. Mining is the largest gross domestic product (GDP) contributor in the WDM at 56%. Notable minerals found and mined in the District include:

- Coal found within the Waterberg coalfield which contains an estimated 76 billion tons of coal or40%+ of the national coal reserve.
- The largest platinum producer in the Province and contributions the most in terms of GDP to the national mining sector.

- Other minerals found within the WDM include chrome, coal, iron nickel, platinum, tin, and tungsten.

The mining and quarrying sector contributes 71% to the LLM economy. The main mineral mined is coal which is sold to locally based coal power stations. Figure 6-5 presents coal mines proposed in LLM.

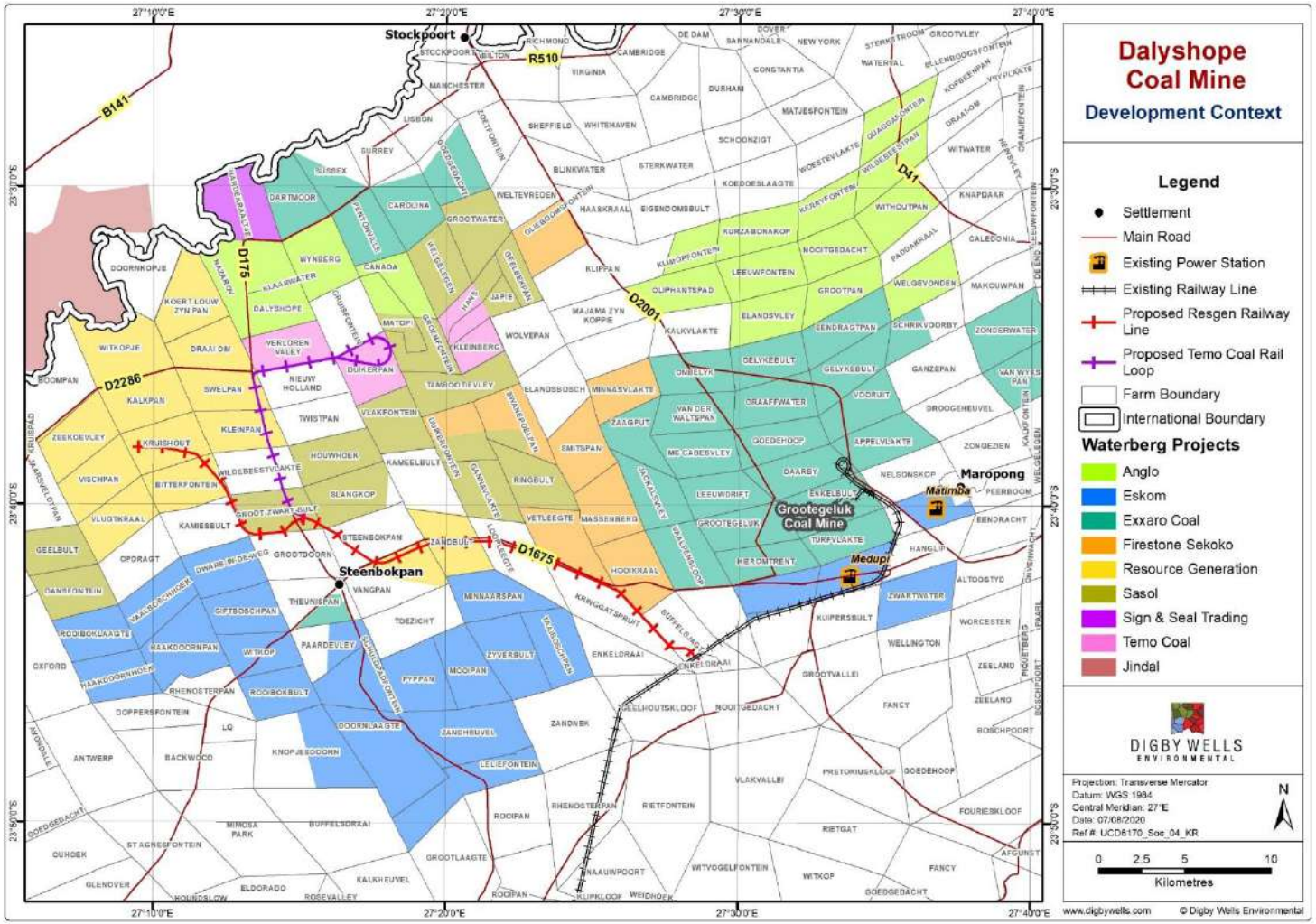

Figure 6-5: Proposed Mines and Developments

6.2.2.2 Agriculture Sector

The agricultural sector (crop and livestock farming) is a significant source of economic activity and source of employment within the District. The most notable crop farming areas within the WDM include the Springbok Flats area and Thabazimbi. Cash crops include crops such as cotton, sunflower, tobacco, and soya beans as well as fruit and vegetables.

In turn, the greater Lephalale area (which encompasses LLM and Ward 3) is focused on game and livestock farming as well as irrigated agriculture. While the Modimolle - Mookgophong's agricultural activities are focused on game farming, citrus fruit, and spice (paprika) production. Participation of the population in the agricultural sector is continuously decreasing due to limited water supply. In areas within Lephalale, water constraints, has resulted in most crop and cattle farmers converting their farms into game farms and eco-tourism establishments.

6.2.2.3 Tourism Sector

The important tourism hotspots within the WDM include:

- The Waterberg Biosphere Reserve, which forms part of the World Network of Biosphere Reserves and is registered with UNESCO.
- The Makapans Valley, a historical site of a siege event between Trekboers and the Ndebele.
- The Nylsvley Wetland, which is a registered Ramsar site and covers approximately 16 000 ha.
- Bela-Bela, which is a tourist town originally known as Warmbaths after the hot springs present in this area.

The WDM, local municipalities and Limpopo Tourism and Parks have established Local Tourism Associations to link government with the tourism industry. A lack of resources is a challenge in maintaining such associations.

LLM is mostly renowned for hunting, wildlife and scenic beauty and nature reserves, sports, and adventure. Routes such as Mokolo (R510); Marula (D1675); Limpopo (R572); Waterberg (R33) and the Heritage route (D3110) have been established to facilitate tourism into the LLM and the greater WDM areas. Ward 3 also has numerous eco-tourism establishments and operators – providing both bushveld experience and game hunting to national and international visitors. According to the IDP the biggest challenge facing the sector is how to increase the number of visitors to the area during the summer months.

6.2.2.4 Labour Force and Employment

Based on the readily available data, Ward 3 had the highest employment rate (65%) compared to the province, district, and local municipality's population Table 6-4 below shows the employment and unemployment rates of the population. Since the data used is outdated, it is assumed that the data reflect the employment conditions around the construction of Medupi

Power Station. During the same period, the province had the nearly half of its population as "discouraged job-seekers and other who were not actively seeking work.

Table 6-4: Employment and Unemployment Rates

	Limpopo	WDM	LLM	Ward 3
Employment rate	27%	38%	44%	65%
Unemployment rate	17%	15%	13%	6%
Other /NEA	49%	43%	42%	28%

6.2.2.5 *Individual Income Levels*

Figure 6-6 summarises the annual income for employed individuals. These figures are as per the 2011 census and have not been updated to consider inflation. An average of five percent (or 5%) of individuals are without income across the study area. An average of 21% across the study areas earn an income between R9 6001 and R 38 400. A family of four with a monthly household income of R 1 600.00 or less would be considered to live in poverty, as this income would leave the family unable to meet their food needs with no money left for non-food items.

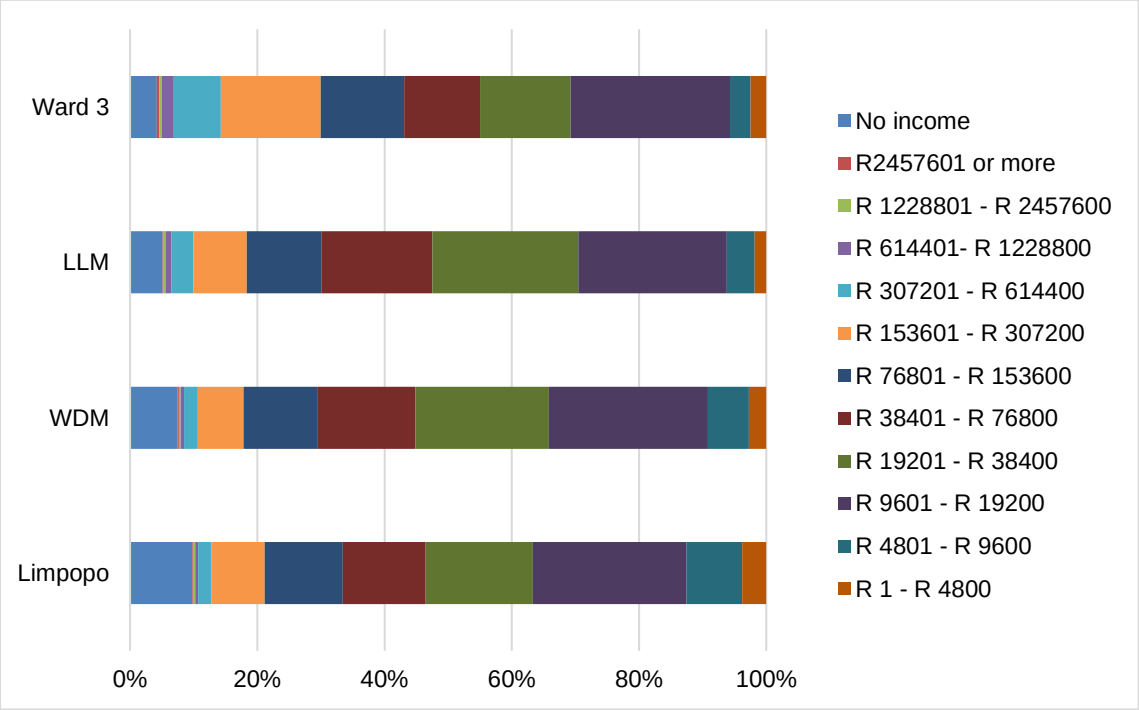

Figure 6-6: Annual Income for Employed Individuals

6.2.3 Household Characteristics

A summary of the households' characteristics within the primary study area is provided in Table 6-5. On average, households in the study areas comprise of four (4) members. Half of

the households at a provincial level are headed by females whilst an average of one percent (1%) of households are headed by children. The average household incomes is lowest at the provincial level and in Ward 3, depicting a monthly income of R4 800 or less.

Table 6-5: Summary of the household Characteristics

Study Area:	Regional	Secondary		
Statistics (2011)	**Limpopo**	**WDM**	**LLM**	**Ward 3**
Number of households	1 447 658	191 214	33 599	3 762
Average household size	4	4	4	3
Dependency ratio	67	55	44	-
Number of female headed households	50%	43%	39%	-
Average household income per annum	R 56 841	R 72 421	R 98 055	R57 500

6.2.3.1 Land Tenure

LLM includes three types of land tenure (LLM, 2019). Table 6-6 below presents an overview of these types of land tenure as well as the areas in which they apply.

Table 6-6: Types of Land Tenure in the LLM

Tenure Type	Description	Applicability
Private Ownership	The most prevalent form of ownership in the LLM.	Lephalale town, most local service points and all farms
Communal Land Ownership	Ownership of land is vested in the national government, but the land is used by residents.	All population concentration points and scattered villages
Deed of Grant	A deed of grant refers to a proclamation that has since become obsolete and grants less than full ownership. Since 1994, some of these deeds of grant have been converted to full ownership through the Extended Benefit Scheme.	Marapong

The Spatial Development Framework (SDF) for LLM includes a proclaimed land use scheme for the local municipality, but this has not been implemented to date (WDM, 2019).

6.2.3.2 Housing

Table 6-7 below presents a snapshot of the most and least common types of dwellings in the study areas. In this figure and table, a cluster house refers to one in a complex and a

townhouse refers to a semi-detached house within a complex. A flat or apartment is considered as a flat or apartment within a block of flats. A house, flat or room in the backyard refers to a room, flatlet, granny flat or servants' quarters on the same property as a larger dwelling or attached to a larger dwelling. A dwelling on a separate stand refers to a house or a brick or concrete structure on a separate property (yard or stand) or on a farm. Informal dwellings are sub-divided into two types: those in a backyard and those which are not. The latter may refer to shacks in an informal or squatter settlement or on a farm. Traditional dwellings refer to any dwelling, hut or structure made of traditional materials.

Table 6-7: Most and Least Common Dwelling Types

Dwelling type	Limpopo	WDM	LLM	Ward 3
Most common	Separate stand	Separate stand	Separate stand	Separate stand
Second-most common	Traditional Dwelling	Informal, other	Informal, other	Informal, other
Third-most common	Informal, other	Informal, in backyard	Informal, in backyard	Flat or apartment
Least common	Caravan / Tent	Caravan / Tent	Semi-detached	Cluster house

Within the WDM, 30 informal settlements have been established with an estimated 5,800 households (WDM, 2019). The informal settlements at Marapong and Steenbokpan including the informal settlement of Lesedi) are included in these figures, with an estimated 2,000 and 600 households, respectively. WDM reports there is a housing backlog in the district. The total housing backlog for the WDM is 68,828 houses, of which 20,575 houses are required in the LLM.

6.2.4 Household Access to Public Services and Infrastructure

This section presents the households access to various basic services including electricity; water supply; sanitation and toilet facilities; waste management; health care; as well as public transport and associated infrastructure.

6.2.4.1 Electricity

Figure 6-7 presents an overview of the sources of energy for domestic activities (i.e., cooking, heating, and lighting) in the LLM. The percentages in the graph show the proportions of households that have access to resources for the various activities – several households did not report access to resources, or these were not captured in the WDM or LLM IDPs. The IDPs also reports that 3 429 households are provided with electricity for free in LLM. The WDM IDP reports an electricity backlog of 32 006 households in the district, of which 1 898 households are in the LLM (WDM, 2019). Eskom plans to connect an additional 363 households in LLM and 3 204 households in the WDM in the 2019/2020 fiscal year. Both the LLM and WDP IDP report that 4 418 households have no electrical connections.

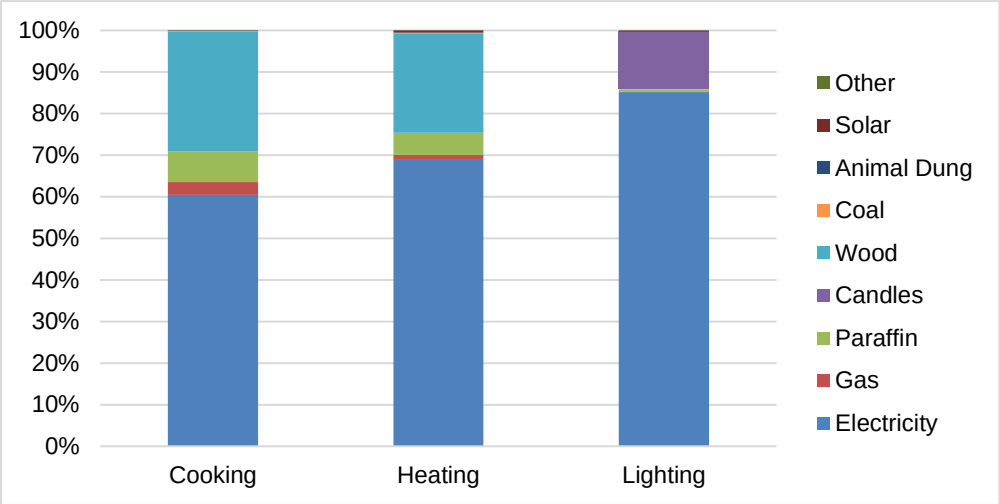

Figure 6-7: Sources of Energy for Domestic Activities

6.2.4.2 *Water Supply*

The Blue Drop report shows that water quality within the WDM, and the LLM, ranges from bad to excellent, depending on the source of the water. However, it appears there is much data missing for the Blue and Green Drop reports (WDM, 2019). Figure 6-8 presents the various sources of domestic water for households within the study areas. In this figure, the regional/local water scheme refers to a scheme that is operated by the municipality or other water services provider. Stagnant water includes pools of water that gathered after, for example, rainfall.

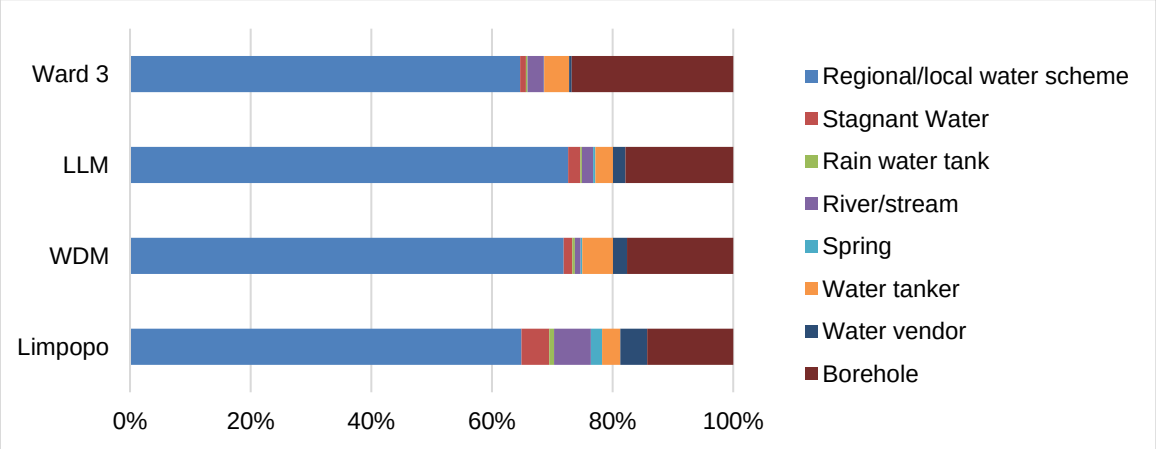

Figure 6-8: Sources of Water for Households in the Broader Study Area

The Moloko Dam supplies all urban areas within the LLM, and the rural areas are currently divided into four different water services schemes (LLM, 2019). The LLM does have a Water Services Development Plan but the most recent of these documents was submitted to the Municipal Council for adoption in 2014. In Ward 3, 75% of households have access to water inside their dwellings. Those that do not have access to water inside their homes make use of a tap on the property (20%) or community standpipes (5%).

Table 6-8 below presents statistics relating to access to water in 2011 and 2016 in the LLM and WDM. The trends in the numbers presented suggest that the water supply is not keeping up with demand in either of these regions.

Table 6-8: Changes in Access to Water between 2011 and 2016

Municipality	LLM			WDM		
Year	**2011**	**2016**	**Change**	**2011**	**2016**	**Change**
Number of Households	29 879	42 073	+ 41%	179 867	211 472	+ 18%
Access to Piped Water	29 080	30 778	+ 6%	169 559	150 653	- 11%
No Access to Piped Water	799	11 295	+1 314%	10 308	60 819	+ 490%

Fewer households in WDM had access to piped water in 2016 as compared to 2011 (WDM, 2019). This trend is also seen in the Modimolle - Mookgophong, Bela-Bela and Mogalakwena Local Municipalities. Within Ward 3, 64% of the households had access to water provided by a regional/ local service provider – while 26% of the households accessed water via borehole owing to the rural nature of the area.

Typical challenges related to the water provision include aging infrastructure, inadequate bulk water supply/ and drought, inferior quality of the drinking water and illegal connections, vandalism, and theft.

6.2.4.3 Sanitation and Toilet Facilities

Figure 6-9 illustrates the access to toilet facilities which includes pit toilets with and without ventilation and flush toilets connected to septic tanks or the sewerage system. Overall, there has been an increase in access to sanitation facilities in both the LLM and WDM. Notably, even though Ward 3 is highly rural and underdeveloped, most of its households (73%) have access to flush toilets, while only 6% of the households were reported to have no access to toilet facilities.

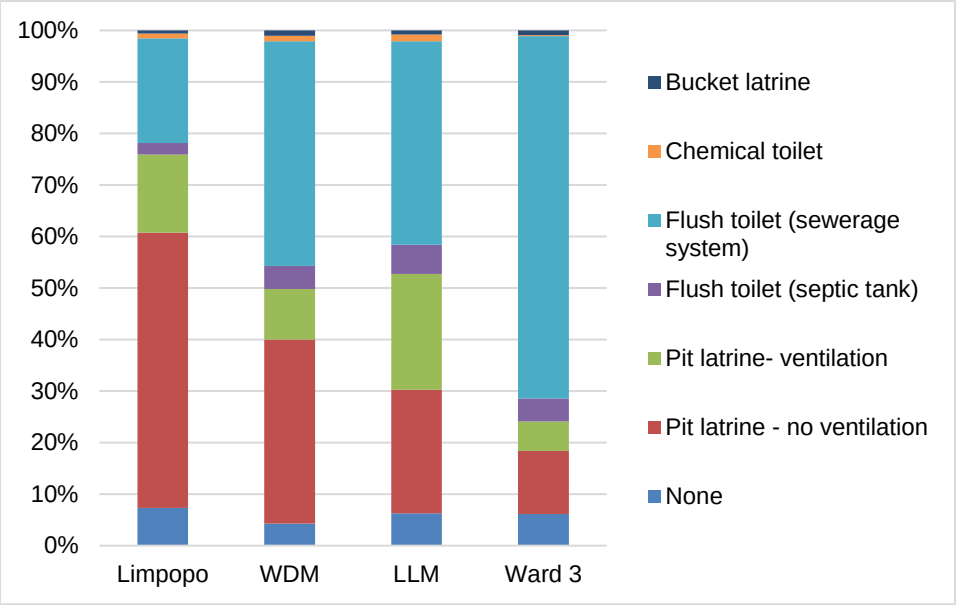

Figure 6-9: Household Access to Toilet Facilities within the Study Areas

6.2.4.4 Waste Removal Services

Data depicting households' access to waste removal services within the study areas is presented in Figure 6-10. Within the WDM, waste collection includes domestic, commercial, industrial, and institutional waste (WDM, 2019).

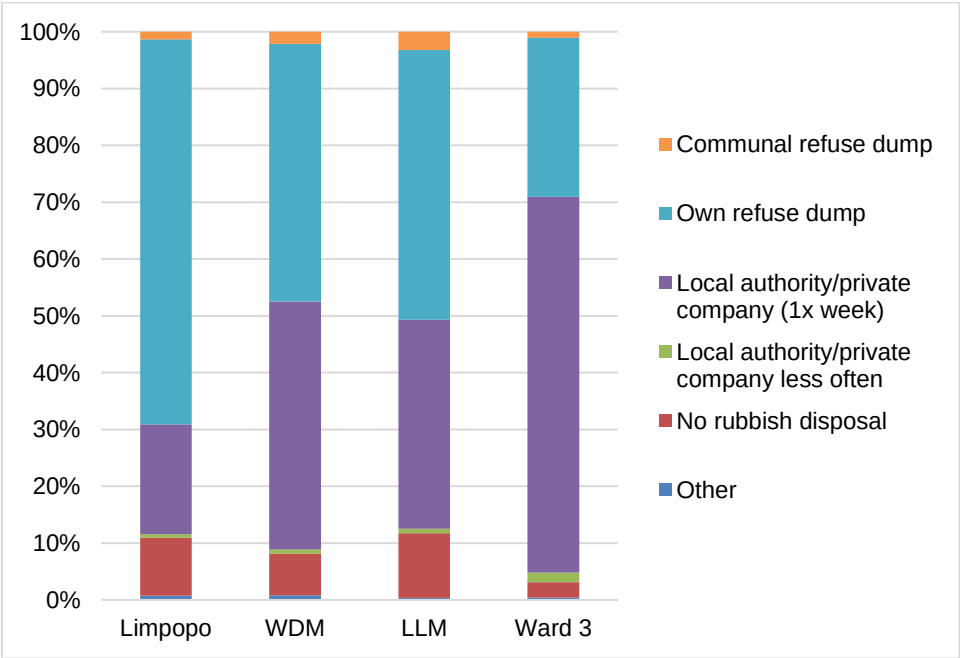

Figure 6-10: Waste Removal Services

In turn, communities within LLM use backyard dumping sites and communal sites (WDM, 2019). The municipality has no drop-off facilities, garden sites, transfer stations, material recovery facilities or buy-back centres for recycling (LLM, 2019). The supply of refuse

receptacles for refuse storage within the LLM is inadequate and there is one permitted waste disposal facility (landfill). The life expectancy of this facility is five years.

The municipality is fully reliant on private companies to recover and process recyclable materials (LLM, 2019). Informal recyclers also recover material at the landfill sites. Illegal dumping of garden refuse is a problem, especially in the Onverwacht and Marapong areas as facilities are not available. Several areas within the LLM, including Steenbokpan, are part of a pilot programme that removes refuse from the rural parts of the municipality. The LLM has provided skips at select central locations and these are collected on a weekly basis. The municipality has implemented a formal waste education programme and supports other waste education initiatives active in the area.

6.2.4.5 Access to Health Care

Table 6-9 presents an overview of the healthcare facilities within the LLM and WDM. Despite the numbers presented in the table, healthcare provision is not adequate within the WDM as numerous settlements occur more than 5 km from a healthcare facility (WDM, 2019). Some rural villages are more than 20 km away from the nearest hospital and more than 5 km from a clinic. In such instances, the communities are serviced by a mobile clinic which visits the area once per week and offer basic health care such as medications and childhood vaccines.

Table 6-9: Number of Healthcare Facilities in the LLM and WDM

Healthcare Facility	LLM	WDM Total
Hospital	2 (and 1 private hospital)	11
Clinic	7	57
Mobile Clinic	7	32
Emergency Medical Services (EMS) Stations	2	12

6.2.4.6 Public Transport and Associated Infrastructure

The WDM includes 21 938 km of roads (WDM, 2019). Of this, only 16% (3 555 km) has been surfaced. Local access roads within the District and local municipalities are gravel roads and are used by busses and taxis. These roads require upgrading. Table 6-10 presents the taxi and bus public transport facilities within the LLM and WDM. Other transportation options include:

- Light Delivery Vehicles (LDVs): although intended for the transport of goods, LDVs are commonly used in both urban and rural parts of the WDM to transport scholars. The health and safety concerns have been noted and efforts have been made to subsidise scholar transport through busses and taxis.

- Metered taxi operations: metered taxis could bridge the gap to provide transportation during 'awkward' times, such as early mornings and late evenings, where people are more vulnerable to crime. Some municipalities have rejected this alternative and the WDM does not have enough information at present to quantify the actual or potential impact of this alternative.
- Transportation of learners: there is an official public transportation system for learners within some parts of the local municipalities within the WDM.
- Non-Monitored Transport (NMT): this is a transport alternative that is used in many parts of the WDM and formalised in some of these areas.

The existing public transportation system is not user-friendly for disabled persons (WDM, 2019). There is no commuter rail transport service in the WDM. The entire railway network in the Limpopo province is owned by Transnet Freight Rail and services long-distance passengers only.

Table 6-10: Transport Alternatives in the LLM and WDM[1]

Healthcare Facility	LLM	WDM Total
Taxis (number of routes)	12	140
Bus operations: Formal bus terminals	2	3
Bus operations: Informal bus terminals	1	6
Bus operations: Total bus terminals	3	9

6.3 Baseline Conditions within the Primary Study Area

The primary study area (or Ward 3) is comprised of commercial farmers engaged in livestock, crop farming, and ecotourism and the community of Lesedi. These are described below.

6.3.1 Commercial Farmers

Due to the COVID-19 hard lock down, the Specialist could only consult with two farmers from the area: including the farmer currently leasing Farms Dalyshope and Klaarwater. The farmer currently leasing the Project affected farms, co-owns one farm portion in the area. The main land uses of the farmland include cattle breeding and keeping and hunting. The farmer has five families currently working on the farms and one of these resides full-time on the farm. Water on the farms is sourced from boreholes, and energy source is grid electricity. In general, the roads are unpaved and become impassable during the rainy season. The farmers and

[1] Information on the Ward level was not available.

their employees use the clinic in Lesedi for health care services or consult private doctors in town.

The indicated the loss of access to the leased farm portions will not affect his farming activities within the study area. However, he is reluctant to continue operating ecotourism side due to the proposed mine next door.

The farmer highlighted the following challenges as they relate to the presence of the mine in the area:

- Both farming and mining are dependent on water and the presence of an additional mine in the area will significantly reduce the water supply. He noted that the water supply has already been impacted by the presence and operation of a nearby mine. He suggested that the mine should undertake a cumulative impact assessment study focused on water supply prior to its establishment.
- International hunters come to South Africa to be in the bush; and that ecotourism farmers cannot sell the bush experience if there are open cast coal mine in amongst the hunting farms. Therefore, the presence of coal mines in the area will affect the local people's livelihood activities.

6.3.2 Opinions and Views of other Farmers in the Area

During stakeholder engagement, one-to-one meetings with neighbouring landowners were held, and the following opinions and views were raised regarding the proposed Project:

- Some stakeholders are of the opinion that due to the presences of some mines in the area, some boreholes on farms such as Canada have dried out. As such, farmers want to know if there will be adequate water supply for both the mine and for them to continue with their farming activities.
- Farmers wanted to know if the mine can abstract water from the Limpopo River instead of using underground resources which they are dependent on.
- Farmers also wanted to know the impacts of blasting have on existing boreholes and infrastructure on site.
- Famers required clarity as to the rock dumps come to the property fences; long-term plans for discard dumps and whether these will be covered with topsoil. Linked to this query are the impacts of air pollution emanating from the rock dumps.
- Accommodation for the workforce – whether it will be on site or elsewhere.
- Road upgrades – whether the Project will upgrade existing roads or not as these have been damaged by existing mining operations in the area.
- Loss of businesses, especially ecotourism, due to the presence of an open cast mine near the hunting farms.
- Farmers wanted to know how they will be able to sustain themselves if their businesses are affected by the mine.

- Some farmers suggested that the mine buys them out if it will be too close to their properties.
- Farmers enquired as to the type of visual barriers the mine plans to use to reduce visual intrusions of the mine site from the farms.
- The mining companies must be held liable and a regional study must be undertaken to understand the far-reaching implications to groundwater and farming.
- The environmental baseline needs to be done accurately to assess the actual impact of the Project to groundwater.
- The mine needs to provide the farmers with a plan to reduce incidences of social ills in the area especially relating to livestock/ game theft and household break-ins.
- Farmers want to understand the impact of blasting on game and livestock.
- Houses and dams have already been affected by the existing mines in the area and addition of another mine will be devastate these further.

Overall, the local farmers are concerned about the impacts of blasting, water extraction and their livelihoods going forward.

6.3.3 Steenbokpan/ Lesedi Community

The Steenbokpan/ Lesedi Community is located ~7 km from the proposed Project area and 46 km from Lephalale. The community was established in 2008 and are informal occupiers of vacant land owned by the South African Government (the Department of Education). Most of the community relocated onto this land after the tenure of farmland they were living on was uncertain. Other community members have relocated here from the Lephalale area. There is a High Court Moratorium preventing the establishment of any permanent infrastructure within the community and there are no plans to convert the present settlement to a permanent settlement. The Municipality plans to relocate the community outside this area.

The community is said to comprise of 1,500 residents; spread across an estimated 300 households According to the interviewees, ~70% of the population are females. Most of the households in the area are headed by women. An estimated 25% of the total population were as being youths, and the remaining population is comprised of a combination of middle-aged and elderly people. An estimated 15% of the community have completed Grade 12.

Most of the population is unemployed and are reliant on government social grants; and piece jobs, while formal employment is comprised of farm work in neighbouring commercial farms as general workers. Furthermore, most of the people of economic active ages have general skills which they acquired through working on the farms and being taught artisanry skills by others.

In terms of access to infrastructure and services, the community of Lesedi reported the following:

- The community has access to a day-clinic; however, it is not open every day. It is not equipped to handle emergencies but provides referrals to the facilities in Lephalale.

- The community has a single primary school. Secondary/ high schools are found in Lephalale and they are provided transportation by the Department of Education in a form of a school bus. Some of the key schooling challenges of the households include:
    - A shortage of educators which has led to the employment of untrained educators at the local school.
    - There are inadequate classrooms at the primary school and some locally based mining companies have donated temporary structures which are used as classrooms. This is due to the local government restrictions on construction of permanent structure in the community.
    - There is a high drop-out rate amongst primary and high school scholars.
- Some households in the area have access to grid electricity – however, only those who can afford to buy electricity. Other households use wood as a source of fuel for cook and heating.
- The main water sources in the area are boreholes which pump into communal taps and taps inside some houses.
- Sanitation facilities are comprised of pit latrines within the yard. For households without sanitation facilities, they share facilities with other shared households.

7 Stakeholder Engagement Comments Received

The stakeholder comments elicited during the consultation process with Project-affected communities and individuals are presented in Table 7-1.

Table 7-1Stakeholder Engagement Comments Received

Aspect	Issue/ Concern Raised	Response
Impacts on Agriculture	• It is envisioned that the implementation of the Project will have short, short, medium- and long-term impacts on agricultural activities in the area.	• Refer to Section 8.2.5.
	• Farmers in the area have been waiting for years to have confirmation of this Project. This has resulted in limited expansion of the farming operations and losses of income due to uncertainty.	
Social and Labour Plan	• It is understood that the municipality does not perceive Lesedi as a formal settlement; however, the community must be considered for all SLP related developments.	• Noted.

Aspect	Issue/ Concern Raised	Response
Upskilling of community	• Through the implementation, Universal Coal should ensure that local people (from Lesedi) are upskilled to access economic opportunities associated with the mine regardless of the level of schooling people have attained.	• Refer to Section 8.1.1, Section 8.1.2, Section 8.2.1, Section 8.2.2 and 8.2.3 and Section 8.2.8.
Influx management	• The mine need to outline its plans to mitigate the impacts associated with in-migration of economic seekers.	• Refer to Section 8.1.4.
Local content	• Local businesses need to consider as part of the Mine's supply chain.	• Refer to Section 8.1.2 and Section 8.2.2.
Visual impacts and loss of sense of place	• How close can the rock dumps come to the fence? We are concerned about dust being blown off these dumps.	• Refer Air Quality Impact Assessment. • Refer to the Visual Impact Assessment.
	• What is the long-term plan for the discard dump, and will they have covered with topsoil?	• Refer to the Project description.
	• What kind of visual barriers will be in place to prevent neighbouring farms from being exposed to the mine?	• Refer to the Visual Impact Assessment.
	• If the mining area expands and it moves closer to some of the commercial farms, will the mine consider purchasing the neighbouring farms?	• Refer to Section 8.2.5.
Workforce provisions	• Where will the mine workforce be accommodated and how will they be transported?	• In the closest town, namely Lephalale and will be transported using buses/ minibuses.
Economic impacts	• The presence of the mine will result in a loss of businesses in the as international and national bushveld visitors will be discouraged from visiting the area if there is an active mine next door to a hunting facility.	• Refer to Section 8.2.5.
	• We cannot hunt with an operational mine next door. We will lose international hunting clients.	• Re fer to Section 8.2.5.

Aspect	Issue/ Concern Raised	Response
Increased road traffic	• The road infrastructure in the area is in a poor condition, and the increase in haul trucks will cause the roads to further deteriorate.	• Refer to the Traffic Impact Assessment.
Cumulative impacts	• The cumulative impacts of the various mines proposed in the area must be investigated especially as they relate to water supply.	• Refer to the integrated cumulative impact section of this EIA.
Water Issues	• The borehole on the Farm Canada has dried out since other mines started operating in the area. How will this Project further affect water supply?	• Refer to the Groundwater Impact Assessment. • Refer to Section 8.2.4.
	• With the proposed mine adjacent to our farms, we will no longer have water.	
	• Can the mine abstract water from the Limpopo?	
	• This Project will deplete all groundwater in the area and already there are so many other mines approved in the area which will also source water from the ground water reserves.	
	• All mining areas proposing to establish mines in the area must commission an underground water study to determine the availability of water and apply the relevant mitigation measure to ensure that local farmers do not run-out of water.	• Refer to the Groundwater Impact Assessment. • Refer to Section 8.2.4.
	• The environmental baseline needs to be done accurately to assess the actual impact of the Project to groundwater.	
	• The presence of the mine will affect access to water and most farmers in the area are dependent on underground water reserves for water supply.	
Community health, safety, and security	• The presence of the mine will affect community health and safety.	• Refer to Section 8.2.9.
	• The mine must present its plan to keep its workforce out of the neighbouring farmers.	

Aspect	Issue/ Concern Raised	Response
	• The mine must ensure durable fencing around its area and ensure that fences are mended where breached.	
Impacts of blasting	• How will wildlife and livestock be affected by blasting activities at the proposed mine?	• Refer to the Blasting and Vibrations Impact Assessment. • Refer to Section 8.2.6.
	• How will the mine ensure that blasting activities do not affect the neighbouring farms?	
	• Farmhouses are old and blasting will affect these.	
	• Houses and dams have already been affected by the existing mines in the area and establishment of another mine will cause further damage to these.	
	• What impact will blasting have on boreholes and structures?	
Decreased air quality	• Ambient air quality standards within the Waterberg district municipality will eventually be affected.	• Refer to the Air Quality Impact Assessment.

8 Impact Assessment

This section presents the impacts identified, assessed, and rated as part of this Report. The impact assessment methodology has been appended in this Appendix A. Impacts are structured as follows:

- Impact description,
- Impact rating prior to mitigation or enhancement and again after consideration of the proposed mitigation or enhancement measures.
- Mitigation measures are formulated to avoid or mitigate negative impacts and enhancement measures to enhance positive impacts.
- The post- mitigation or enhancement rating provides an indication of the significance of residual impacts, while the difference between pre- and post- mitigation / enhancement ratings represents the degree to which the recommended measures are expected to be effective in mitigating or enhancing an impact.

The impacts for each phase of the Project are considered.

8.1 Construction Phase

The subsections below provide details and the significance of potential socio-economic impacts associated with the construction phase of the Project and in some cases impacts that occur across all Project phases. Construction related impacts identified include:

- Creation of employment opportunities.
- Opportunities and capabilities within the supply chain.
- Change sense of place.
- Impacts associated with population influx.
- Community unrest due to a perceived lack economic opportunities and unmet expectations.

8.1.1 Impact Description: Creation of Employment Opportunities

Contrary to the Census 2011 data, unemployment within the greater LLM area is high even though there are active power stations and mines. In part, this is linked to unmatched education, skills, and on-the-job experience of the population as well as the boom-bust effect associated with the completion of construction activities associated with the Medupi power station. Overall, there are higher expectations amongst the general population regarding the Project as a source of employment for the local people.

The number of contrition related employment opportunities is yet to be determined; however, the Project construction phase will short term opportunities which will involve unskilled and semi-skilled positions. Where appropriate, the Project is willing to prioritise employment of local people to suitably qualified members of local people within the primary, secondary, and regional study areas. Those able to secure employment will also enjoy benefits associated with steady income during that period.

People who will be employed by the Project will acquisition work skills and experience not only through on-the-job training but also courses in topics such as health, safety, and environment (HSE) standards. In addition, all training and skills development provided to employees will be undertaken in compliance with the Mining Charter, 2018 (MC18) requirements as outlined in the Social and Labour Plan (SLP) for the Project. The skills and work experience gained on the Project will improve the employability of those engaged in the construction activities and allow them to secure employment elsewhere in the province for related work programs.

8.1.1.1 Management Objectives

- Maximisation of employment of people living within the study areas.
- Ensure a transparent and fair recruitment procedure and processes by the Project and its contractors.

8.1.1.2 Management Actions

- Develop and implement an Employment Policy in compliance with the South African legal framework and company standards. As part of the Policy:
    - Set targets for local employment regardless of the size the work program.
    - Prioritise employment and training of local people over outsiders.
    - Targets must include employment of youths and women from historically disadvantaged backgrounds; and be continuously monitored.
- Establish a Local Employment Office to facilitate access to employment opportunities for local candidates with appropriate skill sets.
- Develop and implement a Work Readiness and Vocational Training Plan in consultation with local stakeholders, including women's groups. The Plan will:
    - Identify the skill needs of the Project and skills gaps in the local community.
    - Provide training for local people to meet Project needs.
    - Identify and focus on the needs of women and youth and design trainings to encourage their participation.
- Develop and maintain a database of people looking for work within the study area.
- Widely advertise all Project employment opportunities in local community newspapers and placed in public places in local languages.
- Comply with minimum wage requirements for unskilled labour and all other requirements, including gender equity, of the Employment Equity Act to ensure maximum benefits accrue to workers; and
- Ensure that no employment take place at the entrance to the site (to avoid people congregating at the work site). Only formal channels for employment will be used.
- Develop and implement a grievance procedure to record and resolve complaints and issues/ concerns of project affected communities.

8.1.1.3 Impact Ratings

The potential employment impacts and enhancement measures are described and assessed in Table 8-1.

Table 8-1: Creation of Employment Opportunities

Creation of Employment Opportunities				
Project Phase			**Construction**	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Short term (2)	Equal to the duration of construction activities (one year).	Slightly beneficial (8)	Minor - positive (40)

Extent	Sub-regional (4)	Employment opportunities will be awarded to people who meet the skills requirements of the Project regardless of their place of origin within south Africa.		
Intensity	Low - positive (2)	A small number of local people could benefit from mostly temporary low skilled jobs. However, it is possible that contractors will use their existing workforce, thereby sustaining current employment with these companies.		
Likelihood	Likely (5)	In the absence of the enhancement measures the benefits will be low.		
Post-Mitigation				
Duration	Long term (4)	As for pre-mitigation.	Moderately beneficial (12)	Minor - positive (60)
Extent	Sub-regional (4)	As for pre-mitigation.		
Intensity	Moderately high - positive (4)	Mitigation will maximise local job creation.		
Probability	Likely (5)	Application of mitigation and combined with the SLP will magnify the impact over the long term.		

8.1.2 Impact Description: Opportunities and Capabilities within the Supply Chain

During construction, the Project will require highly technical capital goods and services, and it will procure these through contracts lasting several months to several years. Although most of the mine Project's specific products will need to be sourced nationally and / or internationally, requirements such as civil engineering services, food supply, maintenance services for non-technical aspects, security services, buildings and facilities maintenance, general vehicle maintenance, employee transport, and land management are able to be procured from some businesses within the secondary and regional study areas.

In the primary study area, direct procurement is expected to be limited due to the undeveloped economy (with most businesses related to eco-tourism and agricultural goods) and the low capability and capacity of service providers to meet the needs of the Project. While some businesses in the local primary study area may eventually be able to enter the mine's supply chain, in part through participation in Project training programmes, few are expected to do so in the early phases of construction.

Without support, the local suppliers are anticipated to have limited capacity to meet the standards of quality and scale required by the Project. However, where local businesses can take up opportunities to be part of the Project's supply chain, enterprises can expect long lasting and sustained benefits.

8.1.2.1 Management Objectives

- To enhance the participation of locally based businesses in Project's supply chain.

8.1.2.2 Management Actions

- Conduct an audit of local businesses and their capacity to meet Project needs, including those businesses in the study area, and maintain a database of local business information.
- Establish local procurement and business development office in central and accessible location to enhance accessibility of information about contract and training opportunities and promote opportunities through trade forums and other events.
- Establish relevant training and capacity building initiatives to support businesses' ability to meet the Project requirements, based on audit results and needs assessments.
- Develop and implement a local Procurement Policy or Plan. The policy/ plan shall provision for the following:
  - Setting of targets the numbers of local businesses used by the Project at all levels will be tracked.
  - Adaptation of Project procurement documents to suit local businesses as far as possible within the standards required of the Project.
  - Provision of incentives for Project contractors to purchase locally and partner with local businesses, including tender requirements regarding local procurement.
  - Creation of an SME electronic portal to facilitate communication of contract opportunities and management training materials to SMEs.
  - Considerations for unbundling of contracts into small work programs to ensure that small and locally based businesses can benefit.
  - Promotion of joint ventures between large and small Contractors to ensure equitable sharing of economic benefits and skills development.
  - Procedure for dissemination of procurement opportunities as early as possible, with clearly defined requirements for the goods or service to manage expectations.
- Partner with relevant organisations where available and appropriate (e.g., government agencies, civil society, and NGOs) to provide access for local businesses to finance and advisory services to develop their capacity to competitively supply to the Project.
- Implementation of the grievance procedure.

8.1.2.3 Impact Ratings

The potential impacts associated with opportunities and capabilities within the supply chain are described in Table 8-2.

Table 8-2: Opportunities and Capabilities within the Supply Chain

Opportunities and Capabilities within the Supply Chain				
Project Phase:		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Long term (5)	Will peak during construction phase and continue throughout the remainder of the life of the Project	Moderately beneficial (11)	Minor - positive (44)
Extent	Sub-regional (4)	Will include some local, but mostly impacts within the local and regional study areas		
Intensity	Low - positive (2)	Will derive from increase in disposable income community development programmes, stimulation of economic sectors, procurement, economic growth, and increased local markets		
Likelihood	Probable (4)	Will primarily depend on proportion of local spending by employees as well as the capacity of local and regional enterprises to provide supply.		
Post-Mitigation				
Duration	Long term(5)	As for pre-mitigation	Highly beneficial (16)	Moderate - positive (96)
Extent	Regional (5)	Enterprise capacity building together with monitoring could concentrate procurement from the regional study area, but also increase involvement of business within the local study area		
Intensity	Very high - positive (6)	Mitigation will increase and intensity of multiplier effects as it will concentrate impact within the secondary and primary study area		
Probability	Highly probable (6)	Increased local employment and procurement as well as upskilling of local enterprises will enhance likelihood of benefits to local economy		

8.1.3 Impact Description: Change Sense of Place

Sense of place describes people's relationship with places, expressed in different dimensions of human life: emotions, ecology, social, economic, cultural, aesthetic, historical, or other aspects (Basso, 1996) and reflects people's place attachment. The Project area is rural in nature, sparsely populated, with agricultural production and eco-tourism as the key livelihood economic activities. Therefore, it is expected that the Project impacts such as increased noise levels, changes to air quality, increased road traffic, visual impact of surface infrastructure, and water quality and quantity impacts, and will alter communities' sense of place. Moreover, the Project may negatively impact the property and land values in these areas especially those owned by eco-tourism operators.

These impacts, combined with actual or perceived changes in safety and security, are likely to be viewed negatively, change the quality of life and sense of well-being of the population living in the primary study areas. Not everyone will view the changes to the area in a positive

manner especially business and landowners whose livelihoods will be threatened by the presence of the mining activities in the area. However, some people such as the youths may view the changes in the primary study area as being positive due increased employment or business opportunities or social benefits with the Project will view the changes as being positive.

8.1.3.1 Management Objectives

- To limit or minimise negative changes in sense of place, whilst enhancing the positive impacts of the changes, where possible; and
- To minimise the visual, noise and dust impacts during implementation of the Project.

8.1.3.2 Management Actions

- Implement mitigation measures proposed in the Visual Impact Assessment Study. Implement induction programmes for all employees and contractors to increase sensitivity to local norms and customs.
- Project Contractors shall implement a 'no fraternization' policy at the worker's camp to minimise relations with prostitutes and unsafe sexual interaction with residents.
- Implement traffic safety measures, particularly speed control and driver awareness training for all drivers.
- Minimise the construction footprint in forested areas and ensure that disturbed areas are rehabilitated with indigenous trees and other plants.
- Implement mitigation measures suggested in Section 8.1.1 along with the mitigation measures as recommended in the relevant specialist reports.
- Adequate plan for rehabilitation.
- Offset negative experience of altered sense of place by maximising local employment/ economic benefits.
- Implementation of the grievance procedure.

8.1.3.3 Impact Ratings

The potential impacts associated with the change sense of place are assessed and described in Table 8-3.

Table 8-3: Change Sense of Place

Change in area's Sense of Place				
Project phase		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond Project life (6)	Changes in the visual character of the landscape will be permanent	Moderately detrimental (-13)	Moderate - negative (-78)

Extent	Project footprint and immediate surrounds (2)	Will affect most communities in the primary study area particularly neighbouring landowners to the Project area		
Intensity	High - negative (-5)	May negatively affect quality of life of local communities especially with impacts related to changes in air quality, noise, etc.		
Likelihood	Highly probable (6)	Some changes in the social environment and the visual character of the landscape will be unavoidable		
Post-Mitigation				
Duration	Long term (4)	As for pre-mitigation	Moderately detrimental (-10)	Minor - negative (-50)
Extent	Local (3)	Mitigation may reduce the area over which changes are discernible.		
Intensity	Moderate - negative (-3)	Mitigation will reduce impacts and/or reduce negative connotations attached to experienced changes		
Probability	Likely (5)	Mitigation will reduce the probability of impact to some extent		

8.1.4 Impact Description: Impacts associated with Population Influx

The Project is likely to give rise to an increase in population influx to the area 'in anticipation of, or in response to, economic opportunities associated with a development and/ or operation of the Project. The in-migrant groups are likely to include labourers; entrepreneurs/ traders; opportunists looking to qualify for Project-related benefits such as local employment, training opportunities, amongst others; informal money lenders; commercial sex workers; and camp followers.

Similarly, to most African countries, in-migration in South Africa is mostly motivated by a search for economic opportunities (business and employment). This is evident in the secondary study area whereby population influx was experienced during construction of Medupi Power Station between 2008 and 2015. The Project employed ~17,000 people who all moved into the Lephalale town which resulted in pressure on public services and infrastructure, price inflation, boom-bust effect to the economy and a reduction in social capital.

Population influx is likely to be experienced by the community of Steenpokpan/ Lesedi which is closest to the Project area and the settlement is informal in nature. The municipality does not recognise the community as a formal settlement; therefore, there is limited development access to public services and infrastructure within the area.

The levels of population influx as it relates to this Project during the construction and operational phase are expected to be start low but in time increase; however, cumulatively with other recently established mines in the area, this may be higher.

Potential impacts associated with population influx that may be experienced by the community of Steenpokpan/ Lesedi, over-time, may include:

- Increased demand for land to be used for informal housing developments, demand for land for cultivation, and from competition for natural resources.
- Increased population will also increase the pressure on biodiversity through increased gathering of natural resources including wood for fuel, and other natural resources.
- Increased pressure on existing public infrastructure and services (sanitation, education, health, etc) which are all already constrained, increasing pressure on the resources of local government, and increasing risks of impacts on health and welfare associated with lack of access to these services.
- Tensions are likely to arise within the community as a result on un-met expectations of employment and economic development because of competition between community members and in-migrants. These may be exacerbated by the actual or perceived advantages of in-migrants.
- In-migration presents the risk of introduction of new diseases into the area and increased transmission and incidence of existing diseases because of new people coming into the area who are carriers, transport of disease vectors from other areas, higher population density and overcrowding, increased sexual activity, clearance of vegetation that provides protection against disease, and poorer access to food, water, and sanitation; .
- Increased population, demand for goods and services, and constraints on supply because of pressure on resources, will all contribute to inflation in local prices and increased economic vulnerability of local people, those who are already vulnerable; .
- Increased pressure on water resources for local community because of the demand for drinking water and water for agriculture from in-migrants.

8.1.4.1 Management Objectives

- To manage, minimise and avoid impacts associated with population influx.

8.1.4.2 Management Actions

- Develop an In-Migration Plan that addresses how the Project will seek to minimise Project-induced in-migration as far as possible. Implement mitigation measures to address the adverse environmental and social consequences, and maximise the benefits, of in-migration. The management plan should be developed together with other industry role players and government.
- To discourage influx of job-seekers, consider prioritisation of employment of unemployed members of local communities.
- Liaise with Local Government to ensure that expected population influx is considered in infrastructure development and spatial development planning. Create synergies with

CDP to ensure that infrastructure development initiatives can off-set increased pressure on local services.

- Identify if recorded criminal activities involved members of the Project's workforce.
- Engage with government authorities on issues, risks, and opportunities regarding in-migration.
- Engage with local communities to understand their concerns, raise awareness of risks and opportunities, and identify solutions to issues relating to in-migration.
- Develop and implement a targeted communications plan in areas known to be potential sources of in-migration and, using migrant networks, inform potential in-migrants of the scale and nature of opportunities, manage their expectations, and where appropriate discourage them from moving to the study area.
- Maintain a clear security zone around all Project land to avoid informal settlement around the perimeter of Project activities.
- Operate employee bus services from local settlements to discourage people from moving from their village to locations closer to Project sites in search of jobs and improve existing roads and build new roads to facilitate access from larger centres to Project sites.
- Focusing Project-workforce housing and vocational training and business support services in larger towns with the most capacity to accommodate new residents.
- Working with and assisting local authorities and relevant partners:
- Develop information, education and communication campaigns around diseases and health practices including sanitation and hygiene.
- Monitoring changes in land cover and land use outside the Project site to identify loss of areas of importance for biodiversity and cultural heritage.
- Discourage informal settlements along Project roads to minimise loss of habitat of value for biodiversity.
- Where available and appropriate to design and implement an information and awareness programme regarding sustainable harvesting and conversation of natural resources.
- Provide education for local agencies and communities on threats to biodiversity from human activities and develop case studies of coexistence between human activities and natural habitat; working with local leaders and community groups to support local cultural events and conserve and reinforce local traditions and culture.
- Supporting community-based and inter-settlement youth programmes for sport, arts, and culture.

8.1.4.3 *Impact Ratings*

The potential impacts associated with of population influx are described and assessed in Table 8-4.

Table 8-4: Impacts associated with Population Influx

Impacts associated with Population Influx				
Project phase		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
PRE-MITIGATION				
Duration	Project Life (5)	The impacts will potential commence at the start of construction and extend through to operation.	Highly detrimental (-15)	Moderate - negative (-90)
Extent	Local (3)	Will mostly affect settlements within the primary study area (e.g., Lesedi)		
Intensity	Extremely high - negative (-7)	Influx will be exacerbated existing negative social conditions in several ways: increased social pathologies, pressure on service, conflict between locals and non-locals and establishment of informal settling		
Likelihood	Highly probable (6)	Influx, pressure on services, growth of informal settlements and poaching are already problems in the local study area.		
Post-Mitigation				
Duration	Project Life (5)	Effective mitigation will prevent long lasting consequences of influx, especially social pathologies	Moderately detrimental (-12)	Minor - negative (-72)
Extent	Local (3)	As for pre-mitigation		
Intensity	Moderately high - negative (-4)	Mitigation measures should be effective in reducing severity of impacts to a limited degree		
Probability	Highly probable (6)	Mitigation will reduce the likelihood of this impact occurring to the extent predicted		

8.1.5 Impact Description: Community Unrest due to a Perceived Lack Economic Opportunities and Unmet Expectations

There are elevated expectations amongst the local community within the primary and secondary study areas in terms of employment associated with the Project. However, it is likely that the skilled personnel required for many jobs during the construction and operation of the mine are not available in the local study area and are likely to be sourced from elsewhere in the country. Many locally based people may be further limited by low levels of education (e.g., most people in Lesedi have primary schooling) and a general absence of formal or on-the-job training opportunities to acquire the requisite skills.

An influx of in-migrant job seekers into the primary study area will significantly increase competition for employment and other opportunities. It is possible that some of these migrants

will have gained relevant skills in mining and construction in other projects within the country and which will be an advantage in seeking work positions with the Project.

The results of stakeholder engagement and community feedback indicate that the youths have particularly elevated expectations of waged employment and /or supply chain contracts with the Project. In addition to the enthusiasm and the sense of entitlement to work that is often felt by youth globally, young men applying for jobs will be aware that they are fit and strong and thus more suited to manual labour and construction jobs. This perception will be compounded by a sense of entitlement to jobs created within the area and the Steenpokpan/ Lesedi community's proximity to the Project area will also play a significant role. The Steenpokpan/ Lesedi community members have already threatened unrest and protest if the Project does not employment or offer them supply chain contracts. They further indicated that a recently held protests on the newly established mine due to the lack of employment opportunities offered to the community.

8.1.5.1 Management Objectives

- To avoid impacts associated with community unrest due to perceived lack economic opportunities and unfulfilled promises.
- To prevent protests and unrest associated with perceived lack of economic opportunities.

8.1.5.2 Management Actions

- Implement enhancement measures associated with all positive impacts to minimise or avoid protest and unrests.
- Implement community development initiatives associated with the Project SLP.
- Undertake ongoing consultation with local communities (including local authorities and traditional leadership) and clearly communicate Project needs and schedule.
- Utilise existing procurement and employment plans that promote transparent and fair recruitment and procurement.
- Encourage stakeholders to utilise the grievance procedure to communicate their issues and ensure timeous response to all lodged complaints and grievances.

8.1.5.3 Impact Ratings

The potential impacts associated with community unrest due to perceived lack economic opportunities and unfulfilled promises are assessed and described in Table 8-5.

Table 8-5: Community Unrest due to Perceived Lack Economic Opportunities and Unfulfilled Promises

Community Unrest due to Perceived Lack Economic Opportunities and Unfulfilled Promises				
Project phase		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**

Pre-Mitigation				
Duration	Project Life (5)	Impact will commence at the start of the project becomes most pronounced during operational phase but continue into decommissioning when infrastructure will be deconstructed.	Highly detrimental (-14)	Moderate - negative (-84)
Extent	Sub-regional (4)	Communities surrounding the Project often resort to unrest and protests whenever dissatisfied with the mine.		
Intensity	High - negative (-5)	Unrest and protest often lead to destruction of property and infrastructure, as well as loss of work hours and business and reputational risks for the mine.		
Likelihood	Highly probable (6)	Community members have indicated that they will embark on protest actions if they are not going benefit from.		
Post-Mitigation				
Duration	Long term (4)	Mitigation measures will reduce impact to such a level that those affected will adapt to disruption over time	Moderately detrimental (-11)	Minor – negative (-55)
Extent	Sub-regional (4)	As for pre-mitigation		
Intensity	Moderate - negative (-3)	Application of mitigation measures should reduce the severity of the impact but not avoid the impact.		
Probability	Likely (5)	Mitigation will reduce the likelihood of this impact occurring to the extent predicted		

8.2 Operational Phase

Project impacts associated with the operational phase discussed in this section include:

- Creation of employment, work skills development and experience.
- Opportunities and capabilities within the supply chain.
- Multiplier effects on the local and regional economy.
- Increased competition for water resources.
- Potential economic impacts on eco-tourism operators and establishments.
- Impacts associated with blasting on neighbouring landowners.
- Workforce health, safety, and security risks.
- Impacts associated with decreased community health, safety, and security.

8.2.1 Impact Description: Creation of Employment, Work Skills Development and Experience

Its anticipated that the Project will create 988 employment opportunities. These will be a combination of long-term and permanent jobs offered through the mining Contractors or directly by the Project Proponent. The jobs that will be created will include highly skilled, semi-skilled and unskilled positions as shown in Table 8-7.

Table 8-6: Estimated Employment Opportunities

Employment Types	Estimated Employment Numbers
Management and offices	147
Mining operations	552
Supervision	107
Plant operations	155
TOTAL	**961**

It is expected that some of the employees will come from the local, district and provincial levels, given that the region has a well-developed coal mining. Those who can secure employment opportunities with the Project during operations will also benefit from training and skills development opportunities linked to the SLP and on-the-job training experience.

8.2.1.1 Management Objectives

- To enhance employment and skills development of people living within the study areas.

8.2.1.2 Management Actions

- Develop and continuously update (throughout the LoM) an Employment Policy with the objective of increasing local employment and transferring operational positions from migrant workers to people from within the study areas.
- Ensure the implementation of the Social and labour Plan to support the promotion of education and skills uplift among local communities within the study areas, including the implementation of on-the-job training and scholarship programme.
- Develop and implement a grievance procedure which local communities can utilise reporting their issues and concerns related to the Project.
- Implement enhancement and mitigation measures in the Sections 8.1.1 and 8.1.2.
- Implementation of the SLP workforce programs.

8.2.1.3 Impact Ratings

The potential impacts of creation of employment, work skills development and experience and enhancement measures are described and assessed in Table 8-7.

Table 8-7: Creation of Employment, Work Skills Development and Experience

Creation of Employment, Work Skills Development and Experience

Project Phase			Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Project Life (5)	Equates to the duration of operation activities (30 years)	Moderately beneficial (13)	Minor - positive (52)
Extent	National (6)	Employees will come from various parts of the country and all employees will be entitled to training and skills development opportunities.		
Intensity	Low - positive (2)	In the absence of skills development, fewer people from the primary study area will be able to secure long-term and highly skilled and well-paid jobs.		
Likelihood	Probable (4)	A limited number of local people possess the education and skills levels required by the Project		
Post-Mitigation				
Duration	Project Life (5)	As for pre-mitigation	Moderately beneficial (13)	Moderate - positive (78)
Extent	Regional (5)	Mitigation will increase the number of people from the study area whilst ensuring work skills development. Adoption of SLP commitments as they relate to training and capacity development of the workforce will also be beneficial.		
Intensity	Moderate - positive (3)	Implementation of enhancement measures will increase the chances of local people securing employment with the Project; whilst ensuring that people are provided with training and skills development.		
Probability	Highly probable (6)	The impact will occur as the operational phase of the Project will require employment of workers and as part of the commitments made by the Project on the SLP will provide training and development.		

8.2.2 Impact Description: Opportunities and Capabilities within the Supply Chain

The estimated procurement budgets for the Project in five-year intervals is presented in Table 8-8 and its anticipated that this will be spending on specialists, consultants, and mining service providers, amongst others. It also expected that suppliers within the secondary study area who will have been involved in construction will have experience with the Project's procurement requirements and be better able to meet its needs during operation. The Project operations are expected to bring increased opportunities and capabilities within the local supply chain, both through direct contracts with the mine as well as indirect procurement opportunities to meet growing local demand for goods and services. Supply chain opportunities are considered to have an effect of a medium magnitude, given limited numbers of non-technical contracts accessible to local suppliers but also increased general demand from the Project.

Table 8-8: Estimated Procurement Budget during the Life of Mine

Estimated Procurement Budget (in ZAR)	Operational years
8,108,204	1
17,802,079	5
54,649,096	10
52,052,308	15
53,019,690	20
57,400,720	25
62,880,104	30

In the primary study area, access to Project training services through the SLP targets and other Project initiatives are likely to help businesses better meet the Project's demand for goods and services.

8.2.2.1 Management Objectives

- To enhance the participation of locally based businesses in Project's supply chain.

8.2.2.2 Management Actions

- Implement enhancement measures provided in Section 8.1.2.

8.2.2.3 Impact Ratings

The potential impacts associated with opportunities and capabilities within the supply chain are described in Table 8-9.

Table 8-9: Opportunities and Capabilities within the Supply Chain

Opportunities and Capabilities within the Supply Chain				
Project Phase:		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Long term (5)	Will peak during construction phase and continue throughout the remainder of the life of the Project	Moderately beneficial (11)	Minor - positive (44)
Extent	Sub-regional (4)	Will include some local, but mostly impacts within the local and regional study areas		
Intensity	Low - positive (2)	Will derive from increase in disposable income community development programmes, stimulation of economic sectors, procurement, economic growth, and increased local markets		

Likelihood	Probable (4)	Will primarily depend on proportion of local spending by employees as well as the capacity of local and regional enterprises to provide supply.		
Post-Mitigation				
Duration	Long term(5)	As for pre-mitigation	Highly beneficial (16)	Moderate - positive (96)
Extent	Regional (5)	Enterprise capacity building together with monitoring could concentrate procurement from the regional study area, but also increase involvement of business within the local study area		
Intensity	Very high - positive (6)	Mitigation will increase and intensity of multiplier effects as it will concentrate impact within the secondary and primary study area		
Probability	Highly probable (6)	Increased local employment and procurement as well as upskilling of local enterprises will enhance likelihood of benefits to local economy		

8.2.3 Impact Description: Multiplier effects on the Local and Regional Economy

The proposed Project could result in several socio-economic benefits through direct and multiplier effects stimulated by capital expenditure on construction and operational activities. Industrial construction activities increase the demand for a wide variety of goods and services, and as a result stimulate and / or sustain growth within the regional manufacturing Limpopo Province, which has a highly developed coal mining industry. This economic environment has the potential to generate opportunities for small, medium, and micro enterprises (SMMEs), provided they are formalised and able to meet the procurement requirements of the proposed mine. The Project and its contractors are committed to making maximum use of local SMMEs and BBBEE companies (as a requirement of the SLP) but may need to procure from businesses elsewhere in the province to meet highly technical needs.

Finally, the capital spent on Human Resource Development (HRD) for mine employees and community development initiatives could, if implemented effectively and sustainably, represent economic progress within the Project area, thereby also creating conditions conducive to economic growth.

8.2.3.1 Management Objectives

To enhance the economic benefits of the Project as it relates upliftment and prioritisation of local people through the provision employment and procurement opportunities.

8.2.3.2 Management Actions

- Implement enhancement measures linked to employment creation and opportunities associated with the supply chain.
- Implement the SLP related interventions.
- Compliance with SLP commitments to make maximum use of local SMMEs and BBBEE companies.
- Implement the grievance procedure.

8.2.3.3 Impact Ratings

The potential impacts and enhancement measures related to multiplier effects on the local and region economy are described in Table 8-10.

Table 8-10: Multiplier effects on the local and regional economy

Multiplier effects on the local and regional economy				
Project Phase			**Operation**	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Project Life (5)	Will peak during Construction Phase and continue throughout the remainder of the life of the Project	Moderately beneficial (12)	Minor - positive (60)
Extent	Regional (5)	Will include local and regional impacts		
Intensity	Low - positive (2)	Will derive from increased cash flow, stimulation of economic sectors, procurement, economic growth, increased demand in local markets, and community development and HRD initiatives		
Likelihood	Likely (5)	Will primarily depend on the proportion of local spending by employees, capacity of local and regional enterprises to supply goods and services, and effectiveness of community development and HRD initiatives		
Post-Mitigation				
Duration	Project Life (5)	As for pre-enhancement	Consequence: Moderately beneficial (13)	Significance: Moderate - positive (78)
Extent	Regional (5)	As for pre-enhancement		
Intensity	Moderate - positive (3)	Enhancement will increase and intensify multiplier effects as it may concentrate impact within the primary and secondary study areas		
Probability	Highly probable (6)	Increased local employment and procurement as well as upskilling of local enterprises will enhance likelihood of benefits to local economy		

8.2.4 Impact Description: Increased Competition for Water Resources

Water is a scarcity resource in both the primary and secondary study areas. In rural part of the area communities are reliant on underground water resources (i.e., boreholes). The

severity of water shortages has resulted in the reduction in crop farming as the currently available water sources cannot sustain the households water needs and irrigation of crops; whilst a decline in livestock farmers has also been witness as of late with water shortages being denoted as the main issue. Water shortages have also been cited as the main hinderance to the development of the area. Coal mining is a water intensive activity – and needs water for dust suppression, reduction of hazard such as fires or explosion, equipment maintenance, amongst others. There are numerous mining companies that have completed environmental studies within the greater study area for coal mining; however, these projects have not been realised due to water shortages. Some neighbouring landowners have reported that their boreholes have been dried-out one after another in the area.

Coal mining, domestic and commercial farming (crops, livestock, and game) cannot co-exist in the area until sustainable solutions to the water shortage has been identified and implemented. Given the severity of water shortages in the area, implementation of other proposed mining developments has been delaying as water related studies are being completed. This is also indicative of the impacts on existing water sources should the Project go-ahead without securing a different water source to that used by local communities and households.

8.2.4.1 Management Objectives

- To avoid and manage the possible depletion of underground water resources within the primary study area.

8.2.4.2 Management Actions

- Implement mitigation from the Underground and Surface Water Specialist Studies.
- Implement the grievance procedure.
- Consult with municipality regarding the provision of additional water in case of underground water resources disruptions due to the Project.

8.2.4.3 Impact Ratings

The potential impacts associated with increased competition for water resources are assessed and described in Table 8-11.

Table 8-11: Increased Competition for Water Resources

Increased competition for water resources				
Project Phase		**Operation**		
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond project life (6)	the impact will be experienced from the start of the project and likely to intensify during operations.	Highly detrimental (-16)	Major – negative (-112)

Extent	Local (3)	the impact will be experienced mostly with the primary study area, especially be the neighbouring landowners.		
Intensity	Extremely high - negative (-7)	in the absence of the implementation of mitigation measures, the neighbouring landowners will no longer have access to portable water for household and business consumption.		
Likelihood	Certain (7)	according to the landowners the implementation of other mining operations in the primary study area has resulted in some of the boreholes in the area running out of water. Therefore, the likelihood of this Project exacerbating the is remains high.		
Post-Mitigation				
Duration	Project Life (5)	As for pre-mitigation	Highly detrimental (-14)	Moderate - negative (-84)
Extent	Local (3)	implementation of mitigation measures will reduce the severity of the impact		
Intensity	Very high - negative (-6)	As per pre-mitigation		
Probability	Highly probable (6)	As for pre-mitigation		

8.2.5 Impact Description: Potential Economic Impacts on Eco-tourism Operators and Establishments

According to several municipal reports, over the past decade there has been an increase in the number of commercial agricultural farm being converted into eco-tourism operators and establishments. This trend is said to be driven by the water shortage in the area, which result in high operational costs whilst financial returns remain unchanged. There are eco-tourism operators and establishments in the vicinity of the Project area include game and hunting farms. The eco-tourism sector mostly attracts city dwellers and international travellers seeking refugee from their busy day-today lives in large cities for undisturbed natural environment devoid of noise and hordes of people. Other visitors come to such area for sport such as game hunting. In turn, mining activities are associated with environmental disturbances such as:

- Increased noise levels linked to heavy duty vehicles (~194 heavy duty vehicles day and night, respectively) and on-site equipment.
- Decreased air pollution owing to increased generation of dust and carbon dioxide through the movement of heavy vehicles, blasting, drilling, ripping, crushing, conveyor belts, people chatter, amongst others.
- Increased movement of people and vehicles.
- Perceived increased incidences of crime (i.e., house break-ins, stock, and game theft) due to the presence of construction teams and mine workers.
- Changes to the visual landscape (inclusive of discard areas, stockpiles, night-time lighting; etc.) to the environment. The most significant daytime visual impact will be from

the topsoil, discard, and the overburden dumps as these cover a large area and have a height of 30 m.

Given the above there is a low likelihood for eco-tourism and mining to co-exist in the area without Project investing in management measures tailored to reduce, minimize, or avoid impacts to eco-tourism establishments in its vicinity. The consequences of inactions on the part of Project would induce the following impacts:

- A reduction in number of visitors, which will in turn, affect income generation and spending in the local economy.
- Increased incidences of house break-in and illegal hunting of game in the eco-tourism establishment and livestock farms in the area.
- Loss of employment by those employed in the sector.
- The sale of affected land parcel, which some landowners have already alluded to.

Given the severity the proximity of the Project to some of the ecotourism establishments; these may be affected by the implementation of the Project.

8.2.5.1 Management Objectives

To minimise and avoid potential economic impacts on eco-tourism operators and establishments.

8.2.5.2 Management Actions

- Commission a stand-alone Tourism Impact Assessment Study with economic modelling to develop a baseline and set-out monitoring indicators.
- Implement the recommendations and mitigation measures of the Tourism Impact Assessment Study.
- Implement the grievance procedure.

8.2.5.3 Impact Ratings

The potential economic impacts on eco-tourism operators and establishments are assessed and described in Table 8-12.

Table 8-12: Potential Economic Impacts on Eco-tourism Operators and Establishments

Potential Economic Impacts on Eco-tourism Operators and Establishments				
Project phase		**Construction**	**Operation**	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond project life (6)	The impacts is will be experienced from the start of the project and intensify as the project moves into operations.	Highly detrimental (-15)	Moderate – negative (-105)

Extent	Project footprint and immediate surrounds (2)	This is likely to affect eco-tourism establishments and operators closest to the Project Area.		
Intensity	Extremely high - negative (-7)	The impact is likely to affect the livelihoods of the eco-tourism operators.		
Likelihood	Certain (7)	The impact will occur due to the nature of the Project.		
Post-Mitigation				
Duration	Beyond project life (6)	As for pre-mitigation	Moderately detrimental (-13)	Moderate – negative (-78)
Extent	Project footprint and immediate surrounds (2)	When the mine reaches peak in 5 years; the impact may also extend to the local area due to increased road traffic from the mining activities.		
Intensity	High - negative (-5)	Application of mitigation measures should reduce the severity of the impact but not avoid the impact.		
Probability	Highly probable (6)	As for pre-mitigation		

8.2.6 Impact Description: Impacts associated with Blasting on Neighbouring Landowners

The amended Explosives Regulations as promulgated by Government Notice No. 41904 dated 14 September 2018 Section 14.16 (2) states no blasting operations are carried out within a horizontal distance of 500 meters of any public building, public thoroughfare, railway line, power line, any place where people congregate or any other structure, which it may be necessary to protect to prevent any significant risks.

There are four farms immediately adjacent to the pit area and within the 500m blasting zone; namely: Nazrov 685, Verloren Valey 246, Wynberg 125 and Gruisfontein 230. In addition, the 500m blasting zone includes a section of the D 175 road which is used by the locals and ecotourism operators in the area. Accordingly, to the Blasting and Vibrations Specialist Study, a farmstead (tag 32) is the closest area with residents and its located within 451 m of the pit blasting zone. This farmstead is predicated to be affected by ground vibration and air blast which may result in structural damage.

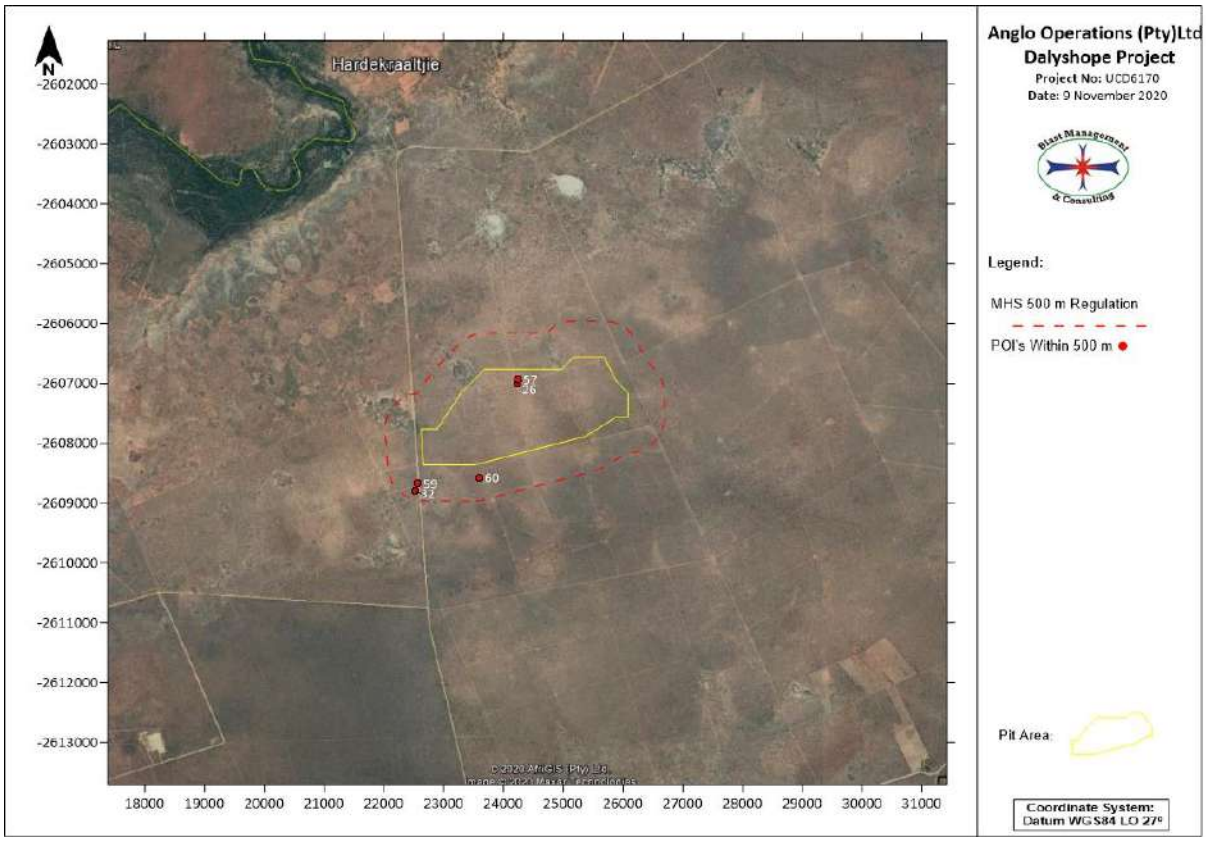

Figure 8-1: Regulatory 500m range for an Opencast Area

Furthermore, the Specialist predicts that there will be less impacts on infrastructure such as gravel roads, graveyards, cultivated fields, dams and rivers because of air blast or ground vibrations. Ruins (tag 54) in the Blasting and Vibrations Specialist Study; will be affected (directly or in-directly) by the construction phase of the Project and will require mitigation.

Livestock and Wildlife Concerns

According to the Blasting and Vibrations Specialist Report, livestock such as cattle are not affected by blasting – they often run away from the first blast, subsequently continue to graze. Domestic animals especially dogs are sensitive to vibrations and load noises than most animals. Therefore, these may be affected by the blasting.

There is limited research done on the impact of high noise levels on wildlife. Direct physiological effects of noise on wildlife, if present, are difficult to measure in the field. Behavioural effects that might decrease chances of surviving and reproducing could include retreat from favourable habitat near noise sources and reduction of time spent feeding with resulting energy depletion. Serious effects such as decreased reproductive success have been documented in some studies. Decreased responsiveness after repeated noises is frequently observed and usually attributed to habituation.

Roads

Gravel roads such as D 175 , lie within the 500m blasting area. Therefore, the Project may be required to implement Stop and Go to reduce the risks to community health and safety associated with blast fly rock.

8.2.6.1 Management Objectives

- To reduce and avoid impacts associated with blasting.

8.2.6.2 Management Actions

- Implement mitigation measures outlined in the Blasting and Vibrations Specialist Study.
- Implement a grievance procedure.
- Implement mitigation measures and recommendations in Section 8.2.5 and Section 8.1.3.
- Widely publicise the daily blasting schedule to neighbouring communities.

8.2.6.3 Impact Ratings

The potential impacts associated with the impacts associated with blasting on neighbouring landowners are assessed and described in Table 8-13.

Table 8-13: Impacts associated with Blasting

Impacts associated with Blasting on Neighbouring Landowners				
Project Phase			Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Project Life (5)	Blasting will be undertaken throughout the life of project and at least once per day.	Moderately detrimental (-13)	Moderate - negative (-91)
Extent	Project footprint and immediate surrounds (2)	Impacts will be experienced the most within the 500m project safety zones. The impacts will be experienced by neighbouring landowners who are adjacent to the project area.		
Intensity	Very high - negative (-6)	Blasting may impact on structures and buildings integrity – leading to injuries or fatalities, boreholes, temporary road closures, etc. as well as decrease a sense of place.		
Likelihood	Certain (7)	The assessment is based on the results of the blasting and vibrations specialist that some structures, graves, ruins, boreholes, roads, animals, etc which are within the 500m blasting safety zone.		
Post-Mitigation				
Duration	Medium term (3)	The effects of the mitigation measures adopted will limit the impacts.	Slightly detrimental (-9)	Minor - negative (-45)
Extent	Project footprint and immediate surrounds (2)	As for pre-mitigation		

Intensity	Moderately high - negative (-4)	implementation of mitigation measures will reduce or avoid the impacts.		
Probability	Likely (5)	As for pre-mitigation		

8.2.7 Impact Description: Occupational Health Risks to Mine Workers

Coal mining is linked to several occupational health risks. The Minerals Council of South Africa lists the dust-induced occupational lung diseases and noise induced hearing loss (NIHL) as the primary occupational health hazards experienced in South Africa. A summary of the predominant occupational health risks is provided in Box 8-1.

Box 8-1 Typical Occupational Health Risks to Mine Workers

- Prolonged exposure to coal dust may result in dust-induced occupational lung diseases such as coal workers' pneumoconiosis (CWP), also known as black lung; chronic obstructive airways disease (COAD); and lung function deficiency.
- Prolonged exposure to high noise levels (more than 85 dBA) has been reported to result in noise induced hearing loss (NIHL);).
- Mining is a physically demanding work activities and when combined with an unhealthy lifestyle (including poor nutrition, alcohol, or substance abuse), it may result in employee fatigue which poses significant health and safety risks to the employee and his / her shift mates.
- For open-pit miners, over exposure to ultraviolet rays carries health risks such as skin cancer, serious eyes damage, dehydration, headaches, and nausea.
- Musculoskeletal disorders (MSDs) refer to any problems affecting your bones, muscles, blood vessels and nerves. The hazards include to a trip, fall or heavy lifting.
- Thermal or heat stress caused by overexposure to heat and humidity can cause the body to become fatigued and distressed.

Other notable health and safety risks to coal mine workers include:

- High prevalence of HIV/AIDs is also common as employees are often away from home for extended periods of time and often have sexual relations with local women or prostitutes.
- Often mine workers adopt an unhealth lifestyle due to increased spending power which result in lifestyle diseases such as hypertension, diabetes, obesity and cardiovascular disorders and alcoholism.
- Most recently, mine workers are also at a considerable risk to contracting the coronavirus disease (Covid-19), which is transmitted through droplets generated when an infected person coughs, sneezes, or exhales.

The Project has stringent corporate safety, health, and environmental policies in place which all employees will be expected to adhere to.

8.2.7.1 Management Objectives

- To minimise occupational health and safety risks to mine workers.

8.2.7.2 Management Actions

Project workers including third party Contractors to be subject to health and safety standards and policies.

Develop and implement a detailed Occupational Health and Safety Management Plan and System. The Occupational Health and Safety (OHS) management plan should include, but not limited to:

- Hazard identification and risk assessment procedure.
- A 'fitness for work' programme to ensure that all employees are physically able to undertake their work without impact to their health.
- Mandatory OHS training programmes provided to all employees, including contractors to ensure staff are aware of the health and safety guidelines.
- Specific OHS training programmes provided for workers assigned to tasks associated with H&S risks.
- All workers should be provided with Personal Protective Equipment (PPE) and be mandated to use it.
- Placement of visual warning signs in place, including those for the electrical and mechanical equipment safety warning, and chemical hazard warning.
- Toolbox talks or health and safety meeting daily to ensure that procedures are being adhered to, and to discuss any incidents that have occurred.
- Develop and implement a workforce grievance procedure where they can raise issues and concerns relating to OHS.
- Conduct information, education, and communication campaigns amongst Project Personnel on hygiene and sanitation.
- Provide awareness, counselling, and testing (ACT) for all Project personnel, including voluntary testing for STIs and HIV/AIDS in pre-employment and on-going health screening. (Workers will not be denied employment or discriminated against in any way based on their HIV status).

8.2.7.3 Impact Ratings

The potential impacts associated with the occupational health risks to mine workers are assessed and described in Table 8-14.

Table 8-14: Occupational Health Risks to Mine Workers

Occupational Health Risks to Mine Workers

Project phase		Construction	Operation	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond project life (6)	As indicated, most of the poor health outcomes experienced by coal mine workers are permanent and require management throughout the life of the affected person.	Highly detrimental (-15)	Moderate – negative (-75)
Extent	Regional (5)	Not all project employees will be from the local area, others will be coming from elsewhere in the municipal area, province, and country.		
Intensity	Moderately high - negative (-4)	Impact will not only affect employees but also family members tasked with caring for them once they are ill.		
Likelihood	Likely (5)	Health, safety ,and security risks will remain inherent due to the nature of the project.		
Post-Mitigation				
Duration	Beyond project life (6)	The poor health outcomes will either be long term or permanent in nature.	Highly detrimental (-14)	Minor – negative (-56)
Extent	Regional (5)	Project employees will be sourced from elsewhere in the country thus the impact will be of a local and regional scale.		
Intensity	Moderate - negative (-3)	As per pre-mitigation		
Probability	Probable (4)	Application of appropriate health, safety and security management measures will reduce the risk of the impact		

8.2.8 Impact Description: Social Development as part of Social and Labour Plan (SLP)

The Project will contribute to community development and social upliftment through the implementation of its SLP. If implemented successfully, the SLP has the potential to facilitate and catalyse socio-economic development within the study area. These initiatives, especially if implemented in consultation and collaboration with other development stakeholders (such as local government, non-governmental development organisations), can contribute towards socio-economic development, sustainable jobs, and income stability of households within local communities.

Contributing toward community development and social upliftment is central to establishing a productive relationship between the Project and its surrounding communities and therefore to establishing and maintaining social licence to operate. It is, however, worth noting that the current SLP projects for the Project are focused on the greater LLM area as the beneficiaries as per the instructions of the Municipality. It is anticipated that, future SLs will focus on specific

communities as per the new requirements for the definition of mine/ host communities outlined in the MPRDA amendment (March 2020).

As predicted, the community of Lesedi is has high expecting for SLP related community developments linked to the Project. However, the Project may only be able to provide infrastructure project in the area as the settlement is informal. Based on the development needs LLM, the Project will support the following development projects during the first 5 years of operation via its SLP:

- Infrastructure Project: the construction of a training centre at Seleka. This training centre can support the mine in its training initiatives to ready the local community for employment at the mine, or within other economic sectors. The mine has elected not to support infrastructure projects that are considered municipal functions (e.g., any water-related projects or the development of roads) or that are funded under the municipality's IDP.
- Education Project: increasing community members' ability to access economic activity through training. This will commence with ABET training.

8.2.8.1 Management Objectives

- To enhance SLP related community development initiatives.

8.2.8.2 Management Actions

- Consultation with Project beneficiaries regarding proposed community development needs and associated initiatives.
- Early identification of community members for enrolment in ABET and portable skills training to improve likelihood of employment on the mine.
- Conduct baseline socio-economic survey of households located within primary study area prior to commencement of community development initiatives to enable accurate identification of eligible Local Economic Development (LED) project and skills training beneficiaries and measure impacts of development initiatives on households.
- Collaboration with other developmental role players during implementation.
- Establishing an external monitoring programme to monitor and evaluate community development initiatives as well as HRDP and procurement policy implemented by the mine and its contractors.
- Expanding skills development and capacity building programmes to non-employees.
- Maintaining a record of training courses completed per individual and community. Where training is offered to non-employees, their contact information and qualifications can be shared with other industries.

8.2.8.3 *Impact Ratings*

The potential impacts associated with community Development as part of Social and Labour Plan (SLP) are described and assessed in Table 8-15.

Table 8-15: Social Development as part of Social and Labour Plan

Social Development as part of Social and Labour Plan				
Project Phase		**Operation**		
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Beyond project life (6)	SLP will be implemented during construction and operational phases.	Highly beneficial (14)	Minor - positive (70)
Extent	Local (3)	Will benefit mine workforce and communities in the primary and secondary study areas.		
Intensity	High - positive (5)	The intensity of the benefits is determined by the scale and reach of the development initiatives.		
Likelihood	Likely (5)	Without adequate stakeholder involvement, development initiatives are unlikely to be sustainable		
Post-Mitigation				
Duration	Permanent (7)	If sustainably managed, benefits could extend beyond the life of the mine	Highly beneficial (16)	Moderate - positive (96)
Extent	Local (3)	As for pre-mitigation		
Intensity	Very high - positive (6)	Recommended measures will enhance stakeholder buy-in and positive impact on beneficiaries		
Probability	Highly probable (6)	Recommended measures will enhance stakeholder buy-in and positive impact on beneficiaries		

8.2.9 Impact Description: Impacts associated with Decreased Community Health, Safety and Security

The following sections presents the potential impacts related to community health safety and security in relation to the mine proposals. Most of the impacts discussed will occur in all phases of the project i.e., through construction, operation and decommissioning and closure. These impacts are likely to be experienced by farm workers and dwellers, the community of Lesedi (19 km away) and some residents of Lephalale Town. The most significant health, safety and security impacts on communities may include:

Health:

- Potential contamination of underground water resources due blasting activities; an issue which is commonly raised by mine communities in other areas where mining occurs.
- Increased incidences of road traffic accidents between humans, livestock, and wildlife. Some small and large mammals roam freely in the primary study area and are often seen crossing the road; thus, increasing the potential road traffic accidents.
- Unplanned spillage of dangerous goods during transportation to the Project area resulting in contamination of soils and waterbodies.
- Potential increase in the transmission of communicable diseases, such as respiratory and sexually transmitted infections resulting from the influx of jobs and business seekers.

Safety:

- Fly rock from blasting during construction may cause injury and / or death of people and livestock.
- Dust from blasting and other Project activities may adversely impact humans, livestock, and wildlife.
- Increased number of road traffic accidents – the project will have 194 heavy vehicles per week in the morning and night, respectively.
- Damage to structures from vibrations caused by blasting or road traffic.
- Injuries and / or fatalities involving community members entering hazardous, access-restricted areas on the construction or mine site and / or being exposed to hazardous materials related to the Project.
- Decreased ambient air quality due to blasting, movement of vehicles, and site equipment and machinery.

Security:

- The increased movement of people in the area will result in increased incidences of livestock and game theft; and an increase in number of house break-ins.

Issues of community health, safety and security will be experienced in the are long after the mine has closed. This relate specifically to the following:

- Some sexually transmitted diseases such as HIV/AIDs lead to permanent poor health outcomes and those affected may need long term care from others.
- The risk of collapse of mine dumps owing to unplanned events such as floods and blasting from other activity mines in the area will remain in place.
- Risks associated with children venturing into the closed mine putting their lives in danger will remain in place.

8.2.9.1 Management Objectives

- To mitigate the risk of increased transmission sexually transmitted diseases and other communicable diseases.
- To mitigate the potential for diseases associated with access to water and sanitation facilities.
- To manage potential impacts related to hazardous substances.
- To mitigate risks associated with safety at the mine works and road traffic.
- To promote the security of the public and communities.

8.2.9.2 Management Actions

General:

- In partnership with government authorities the Project to support improvements to existing health services to handle the increase in population numbers and changes to the existing health profile of the area. This may include facilities, quality of medical personnel, diagnostic capacity, and treatment, etc.

Develop and implement an Emergency Prevention, Preparedness and Response Plan:

- Design and implement measures to minimise the risk of hazardous substances entering the environment, including development of an Emergency Prevention, Preparedness and Response Plan for accidents involving release of hazardous substances to the environment. This will include:
  - Installation of oil water separators and grease traps as appropriate at fixed refuelling facilities, workshops, parking areas, fuel storage and containment areas.
  - Use of drip trays and other temporary measures to prevent entry of hazardous substances into the environment during fuelling or servicing of vehicles and equipment on site.
  - Provision of spill kits and training of staff in their use.
  - Secure storage and labelling of hazardous substances in line with the manufacturer's recommendations and measures to prevent contact with untrained personnel, birds, animals.
  - Secondary containment using impervious, chemically resistant material and designed to prevent contact between incompatible materials in the event of a release.

To mitigate the risk of increased transmission of communicable diseases:

Develop information, education and communication campaigns around diseases and health practices including communicable diseases such as HIV/AIDS, TB, and Covid-19; etc.

Regularly review and update as necessary its existing communicable diseases management strategy.

To mitigate the potential for diseases associated with access to water and sanitation facilities:

- Survey all households in the primary study area to record the location, extent, and quality of water sources the size of the population reliant on water and its usage patterns, particularly regarding seasonality, and differences in water use or access by vulnerable populations, including women.
- Develop a programme in consultation with local communities to improve access to decent quality potable water and determine preferred water infrastructure.

To mitigate community safety from road traffic:

- Develop a Traffic Management Plan covering vehicle safety, driver, and passenger behaviour, use of drugs and alcohol, hours of operation, rest periods and accident reporting and investigations.
- Strictly enforce drug and alcohol policies in relation to Project drivers and undertake regular and random testing of drivers and in response to suspicious behaviour.
- Require Project drivers to be trained in defensive driving and provided regular refresher courses.
- Propose road bypasses where there is a significant risk to public safety from road accidents.
- Establish preparedness and response capabilities to deal with any road traffic or other accidents that may occur including multiple casualty events.
- In partnership with local authorities and the police, educate communities on road traffic laws and road safety.

8.2.9.3 Impact Ratings

The potential impacts associated with decreased community health, safety and security are assessed and described in Table 8-16.

Table 8-16: Impacts associated with Decreased Community Health, Safety and Security

Impacts to community health safety and security				
Project phase		**Construction**	**Operation**	**Decommissioning**
Dimension	**Rating**	**Motivation**	Consequence	Significance
Pre-Mitigation				
Duration	Beyond project life (6)	Impact will be experienced from the start of construction as jobs and business seekers move into the area and on-going throughout the life of the Project.	Highly detrimental (-16)	Moderate - negative (-96)
Extent	Sub-regional (4)	This is likely to affect communities closest to the study area.		

Intensity	Very high - negative (-6)	Impact will result in long term effects and people will not be able to adapt to the changes brought on by the Project.		
Likelihood	Highly probable (6)	Community health, safety and security is often compromised in areas where mining occurs due to the increased movement of people in the area.		
Post-Mitigation				
Duration	Beyond project life (6)	As for pre-mitigation	Highly detrimental (-15)	Moderate - negative (-75)
Extent	Sub-regional (4)	As for pre-mitigation		
Intensity	High - negative (-5)	Mitigation measures will reduce some of the impacts from occurring		
Probability	Likely (5)	Appropriate mitigation will reduce the risk of this impact		

8.3 Decommissioning Phase

This section describes and assess potential impact associated with the decommissioning, closure, and rehabilitation of the mine. The impacts are broadly discussed as it is still too early to fully describe and predict the decommissioning impact at present.

8.3.1 Impact Description: Economic Boom-Bust after the Construction and Operation Phases

The boom-and-bust economic cycle are a key characteristic of capitalist economies and is sometimes synonymous with the business cycle. During the boom, the economy grows, jobs are plentiful, and the market brings high returns to investors. In the subsequent bust the economy shrinks, people lose their jobs and investors lose money. Mine closure involves large scale downscaling and retrenchment of the workforce over several years or months as well as reduction in the procurement of goods and services. This usually result in:

- Reduced cash flow as the workforce is being retrenched and subsequently loss of induced jobs created by the decreased spending in the economy.
- Reduction in spending within the local economy due to a loss of economic opportunities associated with the Mine's operational activities.
- The project will no longer be contributing to economic development and diversification.
- Loss of in-direct and induced employment due to the termination of procurement contracts associated with operations.
- Reduction in the rates and taxes paid to the municipality for utilities resulting in a decreased spending in community infrastructure and services development, whilst the pressure on these increases.
- Increased unemployment rate within the study area.
- Increased dependencies in government social grant system due to job losses.

- Reduction in social capital due to the out-migration of in-migrant labour, returnees, and camp followers, etc. as people move to other areas in search of economic opportunities.
- Increased criminal activities such as livestock, home break-in due to a reduction in economic opportunities.
- Increased price sensitivity especially among the vulnerable households within the study area due to decreased economic activity, shrinkage of the population and oversupply of labour in the area.

If no alternative livelihood options are presented to the workforce and households within the study area; most of mining towns become ghost towns with limited population, and economic opportunities.

8.3.1.1 Management Objectives

- To minimise and manage the economic fall-out associated with the closure of the mine.

8.3.1.2 Management Actions

- Develop and implement an integrated Mine Closure Plan.
- Proactively assess and manage the social and economic impacts on individuals, regions, and economies where retrenchment and/or closure of the Project are certain.

8.3.1.3 Impact Ratings

The potential impacts associated with the economic boom-bust after the construction and operation phases are assessed and described in Table 8-17.

Table 8-17: Economic Boom-Bust after the Construction and Operation Phases

Economic boom-bust after the construction and operation phases				
Project phase			**Decommissioning**	
Dimension	**Rating**	**Motivation**	**Consequence**	**Significance**
Pre-Mitigation				
Duration	Medium term (3)	Effects of retrenchments/ decommissioning will be long-lasting on employees, local businesses, and government	Moderately detrimental (-13)	Moderate - negative (-78)
Extent	Regional (5)	All nonessential employees will be retrenched regardless of where they originate from		
Intensity	High - negative (-5)	Loss of employment will be detrimental to all personnel that will be retrenched and in some case those who lose their jobs may be the breadwinners and the loss of employment will affect their households.		
Likelihood	Highly probable (6)	The Project will inevitably come to an end		
Post-Mitigation				

Duration	Medium term (3)	Effects of retrenchments/ decommissioning will be long-lasting on employees, local businesses, and government	Moderately detrimental (-11)	Minor - negative (-66)
Extent	Regional (5)	Will most severely affect employees and service providers from the primary study area		
Intensity	Moderate - negative (-3)	Implementation of social closure plan will reduce the impact of job losses		
Probability	Highly probable (6)	Mitigation will reduce severity of impact on retrenched workers		

8.4 Cumulative Impacts

Cumulative impacts are those impacts that result from the incremental impact, on areas or resources used or directly impacted by the project, from other existing, planned, or defined developments (including third-party developments) at the time that the risks and impacts identification process is conducted (IFC PS 1, 2012). Potential cumulative impacts associated with the Project and the potential of more mines being established in the study area are outlined in Table 8-18.

Table 8-18: Potential Cumulative Impacts Related to Proposed Project

Risks	Mitigation Measures
• Compounded effects of lighting, noise, traffic, water pollution, dust emission, groundwater abstraction and physical reduction in habitat impacts community health and safety.	• Implement all mitigation measures recommended by the associated Specialist Studies in collaboration with other active mines in the study area.
• Economic dependency on surrounding mines will negatively impact local, regional, and national economies with decommissioning and mine closure.	• Collaborate with government, agencies, and civil society to identify alternative economic activities in the study area.
The presence of multiple mines in the study area is likely to result in the influx of business and job seekers attracted by the economic activities. The increased in-migration of people may result in: • Urban sprawl, housing backlog and / or growth of informal settlements. • Increased social capital associated with an increase in number of highly educated and skilled people searching for economic opportunities associated with the mines. • Increased the pressure on water resources for local communities.	• Develop and implement an In-migration Plan in collaboration with government, civil society, and other active mines in the study area.

Risks	Mitigation Measures
• Increased population, demand for goods and services, and constraints on supply because of pressure on resources, will all contribute to inflation in local prices and increased economic vulnerability of local people, those who are already vulnerable. • Increased anti-social behaviours will adversely affect the lives of the local population.	
• Increased risks associated with road traffic accidents between humans, livestock, game, and mining vehicles. In some cases, this will lead to fatalities.	• Make financial provisions to be used in case of reported and proven incidences of health, safety, and security issues.
• The increase in the number of mines in the area may result in a decreased ambient air quality due to the increase in carbon dioxide emissions associated with increased vehicle movement, machinery, and equipment on mine sites as well as blasting activities. This may, in turn, result in poor health outcomes to those exposed to it.	• Implement recommendations and mitigation measures as per the air quality specialist study as well comply with the national and international standard procedures and protocols for active open cast mining. • Development and implementation of a grievance procedure. • Make financial provisions to be used in case of reported and proven incidences of health, safety, and security issues.
• The presence of multiple active mines in the area has a potential to cause structural damage through blasting and the movement of heavy-duty vehicles; thus, causing health and safety risks to those dwelling in such structures.	• Implement mitigation measures outlined in the blasting, vibrations, and traffic specialist studies. • Collaborate with other mines in the area to develop and implement long-term health and safety procedures and protocols to minimise and avoid the impacts. • Development and implementation of a grievance procedure. • Make financial provisions to be used in case of reported and proven incidences of health, safety, and security issues.

8.5 Unplanned and Low Risk Events

Table 8-19 summarises some of the potential unplanned and low risks events associated with the Project implementation.

Table 8-19: Unplanned Events and Associated Mitigation Measures

Unplanned Risk	Mitigation Measures
• Potential for accidental spillage of hazardous materials such as fuel (heavy fuel oil or diesel), lubricants, sewerage etc. along transport routes or at proposed infrastructure. • Improper management and disposal of hazardous materials during construction, operation and closure of the mine that could result in water resource contamination. • Land-disturbing activities that may result in increased dust emissions. • Project related traffic along the Transport Corridor that may be sources of fugitive dust emissions, and combustion emissions leading to higher levels of air pollution.	Develop and implement the following industry standard procedures and protocols: • Spill Prevention, Control and Containment Plan • Waste Management Plan • Emergency Preparedness and Response Plan • Traffic Management Plan
• Increased antisocial behaviours associated with presence of mine followers such as prostitution, illegal gambling, illegal shebeens, drug uses, etc.	• Collaborate with the relevant government offices and partners to manage the increase in antisocial behaviours.

9 Environmental Management Plan

Table 9-1: Environmental Management Plan

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
• Site/vegetation clearance • Temporary PCD • Contractors laydown yard • Access and haul road construction • Infrastructure construction • Diesel storage and explosives magazine • Topsoil stockpiling • Sewage Treatment Plant • Water Treatment Plant	Creation of employment opportunities	Socio-economic	Construction	• Develop and implement an Employment Policy in compliance with the South African legal framework and company standards. As part of the Policy, set targets for local employment regardless of the size the work program; prioritise employment and training of local people over outsiders; and targets must include employment of youths and women from historically disadvantaged backgrounds; and be continuously monitored. • Develop and maintain a database of people looking for work within the study area. • Establish a Local Employment Office to facilitate access to employment opportunities for local candidates with appropriate skill sets. • Develop and implement a Work Readiness and Vocational Training Plan in consultation with local stakeholders, including women's groups. • Widely advertise all Project employment opportunities in local community newspapers and placed in public places in local languages. • Comply with minimum wage requirements for unskilled labour and all other requirements, including gender equity, of the Employment Equity Act to ensure maximum benefits accrue to workers; and • Ensure that no employment take place at the entrance to the site (to avoid people congregating at the work site). Only formal channels for employment will be used. • Develop and implement a grievance procedure to record and resolve complaints and issues/ concerns of project affected communities.	Enhancement measures: • Promotion of employment of local people and compliance with national employment related legislation.	Pre-construction and construction

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation

• Site/vegetation clearance
• Temporary PCD
• Contractors laydown yard
• Access and haul road construction
• Infrastructure construction
• Diesel storage and explosives magazine
• Topsoil stockpiling
	Opportunities and Capabilities within the Supply Chain	Socio-economic	Construction	• Conduct an audit of local businesses and their capacity to meet Project needs, including those businesses in the study area, and maintain a database of local business information.
				• Establish local procurement and business development office in central and accessible location to enhance accessibility of information about contract and training opportunities and promote opportunities through trade forums and other events.
				• Establish relevant training and capacity building initiatives to support businesses' ability to meet the Project requirements, based on audit results and needs assessments.
				• Develop and implement a local Procurement Policy or Plan. The policy/ plan shall provision for the following:
				  ○ Setting of targets the numbers of local businesses used by the Project at all levels will be tracked.
				  ○ Adaptation of Project procurement documents to suit local businesses as far as possible within the standards required of the Project.
				  ○ Provision of incentives for Project contractors to purchase locally and partner with local businesses, including tender requirements regarding local procurement.
				  ○ Creation of an SME electronic portal to facilitate communication of contract opportunities and management training materials to SMEs.
				  ○ Considerations for unbundling of contracts into small work programs to ensure that small and locally based businesses can benefit.
				  ○ Promotion of joint ventures between large and small Contractors to ensure equitable sharing of economic benefits and skills development.
				  ○ Procedure for dissemination of procurement opportunities as early as possible, with clearly defined requirements for the goods or service to manage expectations.
				• Partner with relevant organisations where available and appropriate (e.g., government agencies, civil society, and NGOs) to provide access for local businesses to finance and advisory services to develop their capacity to competitively supply to the Project.
				• Implementation of the grievance procedure.
					Enhancement measures:
					• promotion of local procurement of goods and services as well as SME capacity development
						Pre-construction, and construction

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
All project related activities associated with construction and operations	Change Sense of Place	Socio-economic	Construction and operation	• Implement mitigation measures proposed in the Visual Impact Assessment Study. Implement induction programmes for all employees and contractors to increase sensitivity to local norms and customs. • Project Contractors shall implement a 'no fraternization' policy at the worker's camp to minimise relations with prostitutes and unsafe sexual interaction with residents. • Implement traffic safety measures, particularly speed control and driver awareness training for all drivers. • Minimise the construction footprint in forested areas and ensure that disturbed areas are rehabilitated with indigenous trees and other plants. • Implement mitigation measures suggested in Section 8.1.1 along with the mitigation measures as recommended in the relevant specialist reports. • Adequate plan for rehabilitation. • Offset negative experience of altered sense of place by maximising local employment/ economic benefits. • Implementation of the grievance procedure.	Control and prevention measures: • Limiting the modification of the area in terms of visual changes through implementation of concurrent rehabilitation throughout LoM • Limiting interactions between local people and project workers	All project phases

All project related activities associated with construction and operation	Impacts associated with Population Influx such as increased competition for residential land and other natural resources as well as an increased strain in accessing government services	Socio-economic	Construction and operation	• Develop an In-Migration Plan that addresses how the Project will seek to minimise Project-induced in-migration as far as possible. Implement mitigation measures to address the adverse environmental and social consequences, and maximise the benefits, of in-migration. The management plan should be developed together with other industry role players and government. • To discourage influx of job-seekers, consider prioritisation of employment of unemployed members of local communities. • Liaise with Local Government to ensure that expected population influx is considered in infrastructure development and spatial development planning. Create synergies with CDP to ensure that infrastructure development initiatives can off-set increased pressure on local services. • Identify if recorded criminal activities involved members of the Project's workforce. • Engage with government authorities on issues, risks, and opportunities regarding in-migration. • Engage with local communities to understand their concerns, raise awareness of risks and opportunities, and identify solutions to issues relating to in-migration. • Develop and implement a targeted communications plan in areas known to be potential sources of in-migration and, using migrant networks, inform potential in-migrants of the scale and nature of opportunities, manage their expectations, and where appropriate discourage them from moving to the study area. • Maintain a clear security zone around all Project land to avoid informal settlement around the perimeter of Project activities. • Operate employee bus services from local settlements to discourage people from moving from their village to locations closer to Project sites in search of jobs and improve existing roads and build new roads to facilitate access from larger centres to Project sites. • Focusing Project-workforce housing and vocational training and business support services in larger towns with the most capacity to accommodate new residents. • Working with and assisting local authorities and relevant partners: • Develop information, education and communication campaigns around diseases and health practices including sanitation and hygiene. • Monitoring changes in land cover and land use outside the Project site to identify loss of areas of importance for biodiversity and cultural heritage.	Prevention measures: • Discourage in-migration of economic seekers settling in the nearby settlements	Pre-construction, construction, and operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
				• Discourage informal settlements along Project roads to minimise loss of habitat of value for biodiversity. • Where available and appropriate to design and implement an information and awareness programme regarding sustainable harvesting and conversation of natural resources. • Provide education for local agencies and communities on threats to biodiversity from human activities and develop case studies of coexistence between human activities and natural habitat; working with local leaders and community groups to support local cultural events and conserve and reinforce local traditions and culture. • Supporting community-based and inter-settlement youth programmes for sport, arts, and culture.		
All project related activities associated with construction and operation	Community unrest due to a perceived lack economic opportunities and unmet expectations	Socio-economic	Construction and operation	• Implement enhancement measures associated with all positive impacts to minimise or avoid protest and unrests. • Implement community development initiatives associated with the Project SLP. • Undertake ongoing consultation with local communities (including local authorities and traditional leadership) and clearly communicate Project needs and schedule. • Utilise existing procurement and employment plans that promote transparent and fair recruitment and procurement. • Encourage stakeholders to utilise the grievance procedure to communicate their issues and ensure timeous response to all lodged complaints and grievances.	Prevention measures: • On-going consultation and communication regarding economic opportunities associated with the project	Pre-construction, construction, and operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
• All project related activities associated with construction and operation	Creation of employment, work skills development and experience	Socio-economic	Operation	• Develop and continuously update (throughout the LoM) an Employment Policy with the objective of increasing local employment and transferring operational positions from migrant workers to people from within the study areas • Ensure the implementation of the Social and labour Plan to support the promotion of education and skills uplift among local communities within the study areas, including the implementation of on-the-job training and scholarship programme. • Develop and implement a grievance procedure which local communities can utilise reporting their issues and concerns related to the Project. • Implement enhancement and mitigation measures in the Sections 8.1.1 and 8.1.2. • Implementation of the SLP workforce programs.	Enhancement and control measures: • Promotion of targeted employment of local people and skills development • On-going communication about the project related opportunities	Construction and operation
All project related activities associated with construction and operation	Multiplier effects on the local and regional economy	Socio-economic	Operation	• Implement enhancement measures linked to employment creation and opportunities associated with the supply chain. • Implement the SLP related interventions. • Compliance with SLP commitments to make maximum use of local SMMEs and BBBEE companies. • Implement the grievance procedure.	Enhancement measures: • through promotion of local procurement, targeted and preference of locals for all employment opportunities as well as implementation of SLP related community developments	Construction and operation
Water use and storage on-site – during the operation water will be required for various domestic and industrial uses.	Increased competition for water resources	Socio-economic	Operation	• Implement mitigation from the Underground and Surface Water Specialist Studies. • Implement the grievance procedure. • Consult with municipality regarding the provision of additional water in case of underground water resources disruptions due to the Project.	Prevention and management measures: • implementation of control and remedial actions recommended by the Underground and Surface Water Specialist Studies.	Operation
• Open pit establishment • Removal of rock (blasting) • Stockpiling (rock dumps, soft dumps, soils, ROM, product, discard dump) establishment and operation	Potential economic impacts on eco-tourism operators and establishments	Socio-economic	Operation	• Commission a stand-alone Tourism Impact Assessment Study with economic modelling to develop a baseline and set-out monitoring indicators. • Implementation of recommendations and mitigation of the Tourism Impact Assessment Study. • Implement the grievance procedure.	Management: • Monitoring the grievance of eco-tourism operators and establishments and implementation of recommendations of the tourism impact assessment study	Operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
Removal of rock (blasting)	Impacts associated with blasting on neighbouring landowners such as dust, noise, vibrations from blasting activities, road closures, etc.	Socio-economic	Operation	• Implement mitigation measures outlined in the Blasting and Vibrations Specialist Study. • Implement a grievance procedure. • Widely publicise the daily blasting schedule to neighbouring communities.	Operation: • Publicising the blasting schedule and addressing grievances related to blasting	Operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
All project related activities associated with construction and operation	Occupational health and safety risks to mine workers such as dust-induced occupational lung diseases and noise induced hearing loss	Socio-economic	Operation	• Project workers including third party Contractors to be subject to health and safety standards and policies. • Develop and implement a detailed Occupational Health and Safety Management Plan and System. The Occupational Health and Safety (OHS) management plan should include, but not limited to: ○ Hazard identification and risk assessment procedure. ○ A 'fitness for work' programme to ensure that all employees are physically able to undertake their work without impact to their health. ○ Mandatory OHS training programmes provided to all employees, including contractors to ensure staff are aware of the health and safety guidelines. ○ Specific OHS training programmes provided for workers assigned to tasks associated with H&S risks. ○ All workers should be provided with Personal Protective Equipment (PPE) and be mandated to use it. ○ Placement of visual warning signs in place, including those for the electrical and mechanical equipment safety warning, and chemical hazard warning. ○ Toolbox talks or health and safety meeting daily to ensure that procedures are being adhered to, and to discuss any incidents that have occurred. ○ Develop and implement a workforce grievance procedure where they can raise issues and concerns relating to OHS. • Conduct information, education, and communication campaigns amongst Project Personnel on hygiene and sanitation. • Provide awareness, counselling, and testing (ACT) for all Project personnel, including voluntary testing for STIs and HIV/AIDS in pre-employment and on-going health screening. (Workers will not be denied employment or discriminated against in any way based on their HIV status).	Avoidance/ Prevention: • Through the implementation of hazard assessments and controls	Construction and operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
All project related activities associated with construction and operation	Social Development as part of Social and Labour Plan (SLP)	Socio-economic	Construction and operation	• Consultation with Project beneficiaries regarding proposed community development needs and associated initiatives. • Early identification of community members for enrolment in ABET and portable skills training to improve likelihood of employment on the mine. • Conduct baseline socio-economic survey of households located within primary study area prior to commencement of community development initiatives to enable accurate identification of eligible Local Economic Development (LED) project and skills training beneficiaries and measure impacts of development initiatives on households. • Collaboration with other developmental role players during implementation. • Establishing an external monitoring programme to monitor and evaluate community development initiatives as well as HRDP and procurement policy implemented by the mine and its contractors. • Expanding skills development and capacity building programmes to non-employees. • Maintaining a record of training courses completed per individual and community. Where training is offered to non-employees, their contact information and qualifications can be shared with other industries.	Enhancement: • Through the implementation of SLP related community development and monitoring of performance against the set targets	Construction and operation

Activity/ies	Potential Impacts	Aspects Affected	Phase	Mitigation Measure	Mitigation Type	Time period for implementation
All project related activities associated with construction and operation	Impacts associated with decreased community health, safety, and security	Socio-economic	Construction and operation	• In partnership with government authorities the Project to support improvements to existing health services to handle the increase in population numbers and changes to the existing health profile of the area. This may include facilities, quality of medical personnel, diagnostic capacity, and treatment, etc. Develop and implement an Emergency Prevention, Preparedness and Response Plan: • Design and implement measures to minimise the risk of hazardous substances entering the environment, including development of an Emergency Prevention, Preparedness and Response Plan for accidents involving release of hazardous substances to the environment. This will include: • Installation of oil water separators and grease traps as appropriate at fixed refuelling facilities, workshops, parking areas, fuel storage and containment areas. • Use of drip trays and other temporary measures to prevent entry of hazardous substances into the environment during fuelling or servicing of vehicles and equipment on site. • Provision of spill kits and training of staff in their use. • Secure storage and labelling of hazardous substances in line with the manufacturer's recommendations and measures to prevent contact with untrained personnel, birds, animals. • Secondary containment using impervious, chemically resistant material and designed to prevent contact between incompatible materials in the event of a release. • Develop information, education and communication campaigns around diseases and health practices including communicable diseases such as HIV/AIDS, TB, and Covid-19; etc. • Regularly review and update as necessary its existing communicable diseases management strategy.	Prevention and Management measures: • Development and implementation of an Emergency Prevention, Preparedness and Response Plan	Construction and operation
Decommissioning	Economic boom-bust after the construction and operation phases	Socio-economic	Decommissioning	• Develop and implement an integrated Mine Closure Plan. • Proactively assess and manage the social and economic impacts on individuals, regions, and economies where retrenchment and/or closure of the Project are certain.	Preventative and Management: • Timeous development of Mine Closure Plan and ongoing consultation of stakeholders about mine closure	Operation and decommission

10 Monitoring Programme

The key social aspects which form the monitoring programme are:

- Local employment targets.
- Local procurement targets.
- Community and workforce health, safety, and security.
- Structural integrity after blasting.
- Local tourism audits.
- Water quality and quantity.
- Air quality.
- Grievance registration.
- Noise levels.
- SLP targets.

Table 10-1: Summary of Aspects to be Monitored

Monitoring Element	Comment	Frequency	Responsible Departments
Local employment targets	Review against set local employment targets	Quarterly	Human Resources Community Development
Local procurement targets	Review the numbers of local businesses engaged in programs either individuals or through joint ventures	Quarterly	Human Resources Community Development
Community and Workforce health, safety, and security;	On-going identification, management, monitoring of H&S risks	Daily	Health and Safety Community Development
Structural integrity of houses	On-going monitoring of structural integrity of houses near the mine after blasting	Quarterly or when required (i.e., stakeholder logs a grievance)	Health and Safety Stakeholder Engagement
Water quality and quantity;	Implement standard operating protocols Track and monitor the number of grievances registered on the matter	Quarterly Weekly	Environmental Stakeholder Engagement
Air quality	Implement standard operating protocols	Quarterly Weekly	Environmental

Monitoring Element	Comment	Frequency	Responsible Departments
	Track and monitor the number of grievances registered on the matter		Stakeholder Engagement
Local tourism audits	Conduct an audit to assess the state of tourism businesses within the vicinity of the mine	Every 6 months	Community Development Stakeholder Engagement
SLP implementation	Conduct annual audits against set targets for implementation	Annually	Stakeholder Engagement
Grievance registration	Track and monitor the number of grievances registered on the matter	Daily/ weekly	Community Development

11 Recommendations

From a socio-economic perspective, it is recommended that the proposed Project proceed. This recommendation is however subject to the following conditions:

- The mitigation and enhancement measures listed for each impact, negative and positive, must be implemented; especially those relating to:
  - Impacts on ecotourism operators and establishments.
  - Water supply and increased competition thereof.
  - Impacts associated with blasting on neighbouring landowners; and
  - Potential in-migration into the settlement of Lesedi.
- A social management plan and social monitoring plan must be developed to manage and monitor the implementation of these measures and recommend corrective measures, where necessary; and
- Implement mitigation measures recommended in other specialist studies, including traffic, dust, blasting, ground and surface water and others, that are likely to have socio-economic impacts.

12 Reasoned Opinion Whether Project Should Proceed

Digby Wells does not object to the Project provided the recommendations detailed above are implemented.

13 Conclusion

The aims of the Social impact assessment were to comply with NEMA EIA Regulations 2014 as they relate to Appendix 6 (Part 1) specialist studies through the following:

- A description of the methodology adopted in preparing the report.
- A description of study limitations and constraints.
- A description of the findings and potential implications of such findings on the impacts of the Project.
- Consideration of socio-economic benefits associated with the Project.
- The provision of implementable mitigation and enhancement measures; and
- Monitoring requirements for inclusion in the EMPr or environmental authorisation.

To this end, the objectives of the study have been met in **Sections 5** through to **12** of this Report. Based on the findings of the study, Digby Wells has no objects to the Project proceeding if all mitigation and enhancement measures provided are implemented.

14 References

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