

APPENDIX S

Socio-economic Assessment

REPORT

Social Baseline and Impact Assessment for the proposed Turfvlakte Open Pit Mine Project at Grootegeluk Coal Mine near Lephalale, Limpopo Province.

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June 2020



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APPENDICES

APPENDIX A

Document Limitations

ACRONYMS/ ABBREVIATIONS

Acronym or Abbreviation	Full Term
HDSA	Historically Disadvantaged South African
I&AP	Interested and Affected Parties
IDPs	Integrated Development Plans
LED	Local Economic Development
MPRDA	Mineral and Petroleum Resources Development Act
NEMA	National Environmental Management Act
NGO	Non-Governmental Organisation
SDF	Spatial Development Frameworks
SIA	Social Impact Assessment
SLP	Social and Labour Plan
SP	Significance Points
CRR	Comment and Response Report
GVA	Gross Value Added
HDSA	Historically disadvantaged South African
ROM	Run of mine
GDP	Gross Domestic Product

SPECIALIST DECLARATION

As required under Appendix 6 of the Environmental Impact Assessment Regulations, 2014 (as amended), I, **Dr Sithandiwe Ntila**, declare that:

- I act as an 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 Acts, Regulations and any guidelines that have relevance to the proposed activity;
- I will comply with all applicable Acts and Regulations in compiling this report;
- I have not, 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 particulars furnished by me in this declaration are true and correct.



Signature of the specialist:

Golder Associates Africa (Pty) Ltd

Name of company (if applicable):

23 March 2020

Date

1.0 INTRODUCTION

Exxaro Coal (Pty) Ltd (Exxaro) has commissioned Golder Associates Africa (Pty) Ltd (Golder) to undertake an Environmental and Social Impact Assessment for the proposed extension of Exxaro's mining activities onto the adjoining farm, Turfvlakte 463 LQ. The farm Turfvlakte 463 LQ lies on the south-eastern border of the Grootegeluk Mining Rights Area. Exxaro wishes to develop two new open pits at Turfvlakte, on the southern area, for the mining of Benches 9A, 9B and 11. It is expected that the proposed project will have socio-economic impacts on the receiving environment. Consequently, Golder has undertaken this Social Impact Assessment (SIA) for the proposed project. The following sections provide the terms of reference and the legislative requirements which apply to this SIA.

1.1 Terms of reference

The terms of reference for this SIA are to;

- Describe the socio-economic conditions of the receiving environment;
- Identifying and describing the socio-economic implications associated with the proposed project;
- Identify, describe, and rate the significance of the socio-economic impact that may result from the proposed project; and
- Recommend feasible (practical and cost-effective) mitigation measures to enhance positive effects and reduce negative impacts.

1.2 South African legislative requirements

This section provides an overview on the South African acts for mining development projects viz., the National Environmental Management Act (NEMA), 1998 (Act No. 107 of 1998) and the Mineral and Petroleum Resources Development Act (MPRDA), 2002 (Act No. 28 of 2002). In addition to NEMA and MPRDA, this section provides an overview of other South African acts and regulations which apply to the SIA.

1.2.1 National Environmental Management Act, 1998 (NEMA) (Act No 107 of 1998)

According to NEMA, sustainable development requires the integration of social, economic, and environmental factors in the planning, implementation, and evaluation of decisions to ensure that development serves present and future generations. NEMA also sets out the process for public participation.

1.2.2 Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (Act No. 28 of 2002)

The MPRDA states that “any mining operation must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into planning and implementation.” The MPRDA also identifies the timeframes and manner, in which the public should be consulted. The MPRDA states that “mining or prospecting must be conducted in accordance with generally accepted principles of sustainable development by integrating social, economic and environmental factors into the planning and implementation of prospecting and mining projects.”

The MPRDA also identifies the need for the development of a social and labour plan to be submitted with the mining rights application.

1.2.3 The Constitution of South Africa

Table 1 shows the objectives and development duties of municipalities, including the legal rights of all South Africans as per the Constitution of the Republic South African, 1996.

Table 1: Aspects of the South African Constitution applicable to the SIA

Regulation	Description
Section 25 of the Constitution	<p>“(1) No one may be deprived of property except in terms of the law of general application, and no law may permit arbitrary deprivation of property;</p> <p>(2) Property may be expropriated only in terms of general application – (a) for a public purpose or in the public interest; and (b) subject to compensation, the amount of which and the time and manner of payment of which have either been agreed by those affected or decided or approved by a court; and</p> <p>(6) A person or community whose tenure of land is legally insecure as a result of past racially discriminatory laws or practices is entitled, to the extent provided by an act of Parliament, either to legally secure tenure or to comparable redress.”</p>
Section 26 of the Constitution	<p>(1) Everyone has the right to have access to adequate housing; and</p> <p>(3) No one may be evicted from their home, or have their home demolished, without an order of court made after considering all the circumstances. No legislation may permit arbitrary evictions.”</p>

1.2.4 The South African Mining Charter

The Broad-Based Socio-Economic Empowerment Charter for the Mining and Minerals Industry, 2018 (Mining Charter) seeks to achieve the following objectives:

- To promote equitable access to the nation's mineral resources to all the people of South Africa;
- To substantially and meaningfully expand opportunities for historically disadvantaged South Africans (HDSA) to enter the mining and minerals industry and to benefit from the exploitation of the nation's mineral resources;
- To utilise and expand the existing skills base for the empowerment of HDSA and to serve the community;
- To promote employment and advance the social and economic welfare of mine communities and major labour sending areas;

- To promote beneficiation of South Africa's mineral commodities; and
- Promote sustainable development and growth of the mining industry.

Consequently, social management and mitigation measures, to be developed as part of the SIA, will be aligned with the Mining Charter.

1.2.5 National Spatial Development Perspective

According to the National Spatial Development Perspective, spatial development should, where appropriate, accommodate and promote private sector economic ventures, which can aid sustainable economic growth, relieve poverty, increase social investment, and improve service delivery. Consequently, municipal-level spatial planning will be considered where possible.¹

2.0 SOCIAL IMPACT ASSESSMENT METHODOLOGY

2.1 Data collection

To understand the socio-economic baseline conditions of the project-affected areas and the socio-economic implications of the proposed project to the receiving environment, Golder conducted secondary desktop data collection (desktop review) and primary data collection as part of the stakeholder consultation process. These two methods are elaborated further in the next sections.

2.1.1 Desktop review

Golder reviewed available documents to obtain information regarding the socio-economic conditions in the study area. The documents reviewed include the following:

- Integrated Development Plans (IDPs) and Spatial Development Frameworks (SDF) of the affected local and district municipalities;
- Socio-economic and demographic statistics (sourced from Statistics South Africa's 2011 census data, municipal report, provincial data and the 2016 community survey);
- Documents concerning the proposed project, which include project description document, scoping report and social and labour plan (SLP); and
- Available maps and satellite imagery.

2.1.2 Primary Research

Golder consulted with interested and affected parties (I&AP) during the scoping phase of the project by distributing background information documents with comment sheets, conducting one-on-one interviews, focus group meetings and public meetings. The information derived from the meeting minutes was used to develop a better understanding of the stakeholder's concerns, issues, and expectations. This process formed part of the primary research process.

A public meeting was held during the morning of Tuesday 25 February 2020 in Lephalale. A second meeting scheduled for the afternoon of 25 February 2020 did not materialise, as no stakeholders attended. In addition, the draft scoping report was made available for public review for 30 days from Monday 27 January 2020 until Tuesday

¹ (Golder Associates Africa 2020)

25 February 2020. The comment period was extended to 9 March 2020 due to civil unrest in the area. All issues, questions, concerns and suggestions for enhanced benefits raised by I&APs to date have been captured in the Comment and Response Report (CRR).²

2.2 Impact assessment approach

2.2.1 Identification of impacts

Based on the collected secondary data, outcomes of the stakeholder consultation³ and expert knowledge, impacts were identified and categorised according to the project phase in which the impacts are likely to occur viz., construction, operation, and closure and decommissioning phases.

2.2.2 Rating of impacts

The significance of the identified impacts will be determined using the approach outlined below (terminology from the Department of Environmental Affairs Guideline document on Environmental Impact Assessment Regulations, April 1998). This approach incorporates two aspects for assessing the potential significance of impacts, namely occurrence and severity, which are further sub-divided, as shown in Table 2.

Table 2: Aspects for assessing the potential significance of impacts

Occurrence		Severity	
Probability of occurrence	Duration of occurrence	Scale/extent of the impact	Magnitude (severity) of impact

To assess each of these factors for each impact, Table 3 shows the four ranking scales used.

Table 3: Scoring system for evaluating impacts

Magnitude	Duration	Scale	Probability
10 - Very high/do not know	5 - Permanent	5 - International	5 - Definite/do not know
8 - High	4 - Long-term (longer than 10 years, with the impact ceasing after the closure of the project)	4 - National	4 - Highly probable
6 - Moderate	3 - Medium-term (4-10 years)	3 - Regional	3 - Medium probability
4 - Low	2 - Short-term (1-3 years)	2 - Local	2 - Low probability

² (Golder Associates Africa 2020)

³ As indicated in the comments and response register (Golder Associates Africa 2020)

Magnitude	Duration	Scale	Probability
2 - Minor	1 – Immediate (less than a year)	1 - Site only	1 - Improbable

Once these factors are ranked for each impact, the significance of the two aspects, occurrence, and severity is assessed using the following formula:

SP (significance points) = (magnitude + duration + scale) x probability

The maximum value is 100 significance points (SP). The impact significance will then be rated as follows:

SP >75	Indicates a high environmental significance	An impact which could influence the decision about whether or not to proceed with the project regardless of any possible mitigation.
SP 30 – 75	Indicates moderate environmental significance	An impact or benefit which is sufficiently important to require management, and which could influence the decision unless it is mitigated.
SP <30	Indicates low environmental significance	Impacts with little real effect and which should not have an influence on or require modification of the project design.
+	Positive impact	An impact that is likely to result in positive consequences/effects.

In the methodology outlined above, the following definitions were used:

- **Magnitude** is a measure of the degree of change in a measurement or analysis (e.g., the area of pasture, the impact on social infrastructure such as schools, clinics and churches or the number of people potentially affected). It is classified as none/negligible, low, moderate, or high. The categorisation of the impact magnitude may be based on a set of criteria (e.g. health risk levels, socio-economic impact, social dynamics and professional judgement) pertinent to each of the impacts. The specialist study must attempt to quantify the magnitude and outline the rationale used.
- **Scale/Geographic extent** refers to the area that could be affected by the impact. It is classified as onsite, local (typically adjacent landowners, land users and communities), district and regional (including towns and settlements in the larger project area that may be affected), national, or international. The type and nature of different projects may have a different scale or geographic context.
- **Duration** refers to the length of time over which a social impact may occur, e.g. immediate/transient, short-term (one to three years), medium-term (four to 10 years), long-term (greater than 10 years with impact ceasing after the closure of the project), or permanent.
- **Probability of occurrence** is a description of the probability of the impact actually occurring as improbable (less than 5% chance), low probability (5% to 40% chance), medium probability (40% to 60% chance), highly probable (most likely, 60% to 90% chance) or definite (impact will definitely occur).

2.2.3 Mitigation measures

Mitigation measures were formulated to avoid or reduce negative impacts and to enhance positive ones. Golder used the following criteria when recommending mitigation measures:

- ability to avoid the impact without having significant negative secondary consequences;
- potential to mitigate the adverse effects where the impacts cannot be avoided;
- potential to strengthen positive impacts through mitigation measures, and
- Feasibility and cost-effectiveness.

After suitable mitigation measures were identified for each impact, the rating procedure described in the section above was repeated to assess the expected significance. The difference between pre and post-mitigation rating represents the degree to which the recommended mitigation measures are expected to be effective in reducing the impacts.

3.0 PROJECT DESCRIPTION

3.1 Project location

The Turfvlakte project area, as part of the Exxaro Grootegeeluk Coal Mine, falls within the jurisdiction of the Lephalale Magisterial District (Figure 1). The project area is located in the Lephalale Local Municipality (Ward 2), which falls within the boundaries of the Waterberg District Municipality, in the Limpopo Province. The proposed project area is bordered by the remainder of the Grootegeeluk Coal Mine to the immediate north, northeast, northwest and western sides, the Eskom Medupi Power Station to the south and privately-owned land to the east and southeast (Figure 2). The Matimba Power Station is located approximately 3 000 m to the east, and the Marapong community is located about 5 000 m to the northeast.

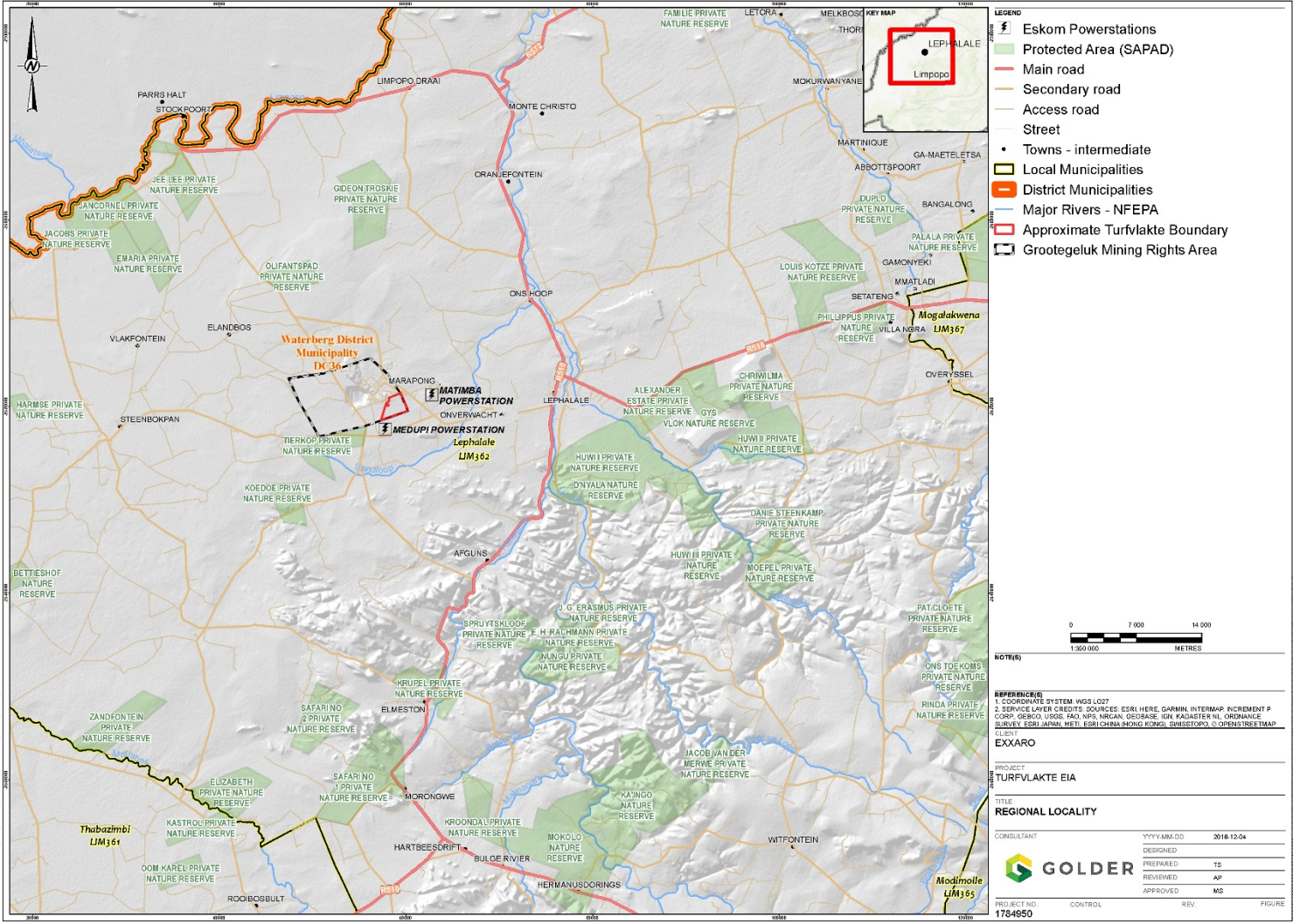


Figure 1: Grootegeluk Coal Mine locality in the regional context.

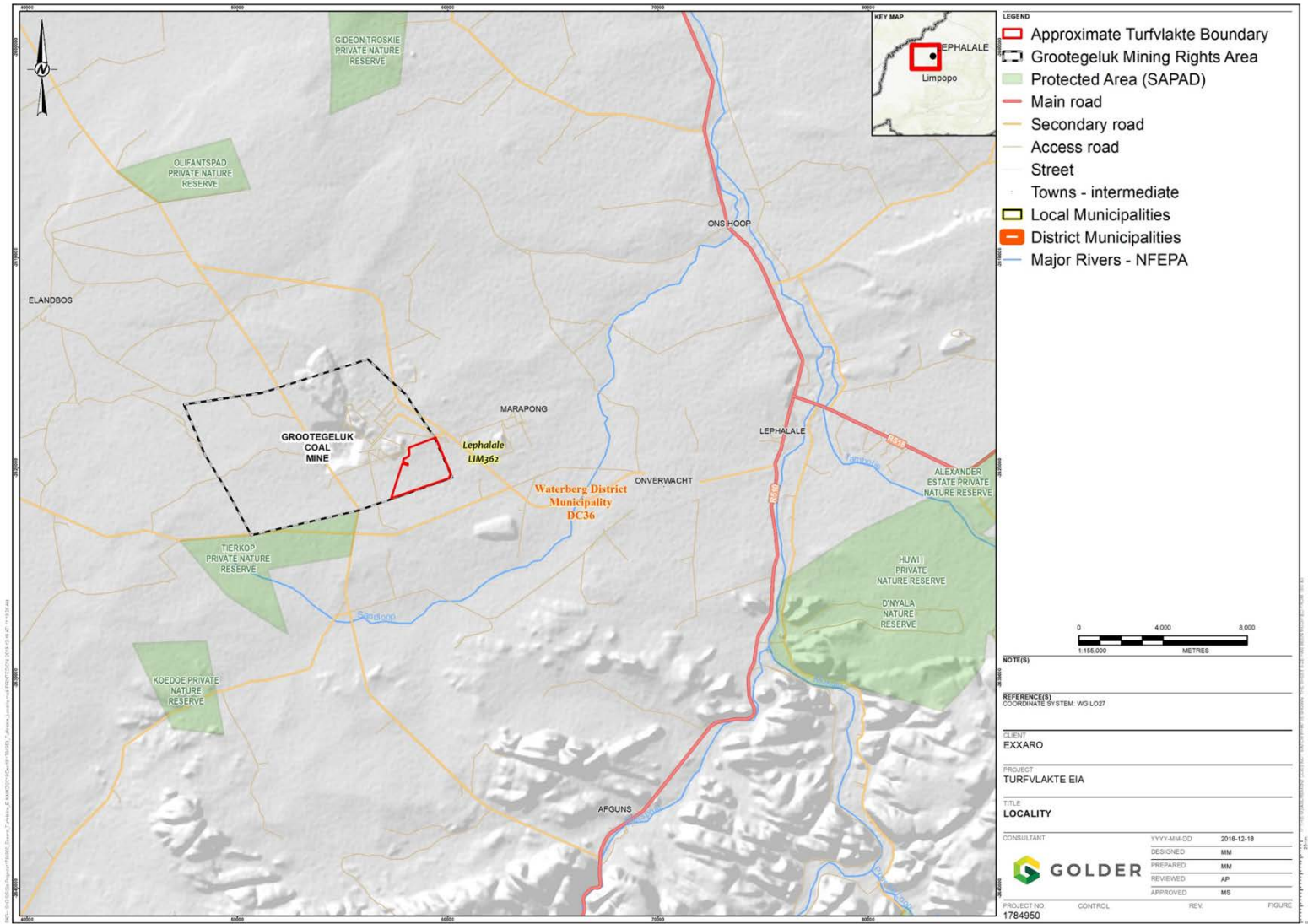


Figure 2: Locality of the Turfvlakte Project Area

3.2 Overview of Project Activities

Exxaro is proposing to expand its existing mining operations by extending the opencast mining operation to the farm Turfvlakte 463 LQ. The farm is located within the existing Grootegeluk Coal Mine's Mining Right, LP 46 MRC. The opencast operations will consist of two pits, namely Pit 1 and Pit 2. Pit 1 will be 158 ha in size and will be 88 m deep, while Pit 2 will be 64 ha and 109 m deep. The preferred option is to mine Pit 1 and then Pit 2 to produce 1.5 million tonnes per annum run of mine (ROM) coal for twelve (12) years.

The alternative option is to mine Pit 2 first and then Pit 1, to produce 3 million tonnes per annum ROM coal over seven (7) years. The interburden and coal mined from Pit 1 and Pit 2 will be transported to and handled at the existing Grootegeluk Coal Mine plants. The mining operations will be undertaken 24 hrs, six days a week

The proposed infrastructure to be established at the surface in support of the coal mining operation includes haul roads connecting the proposed pits to the existing Grootegeluk Coal Mine operations, laydown area for the mining equipment and offices, water management infrastructure (sumps and pipelines), waste management area (waste skips), and a sub-station. The specific activities associated with the proposed project will be:

- Stripping and stockpiling of topsoil in front of the advancing opencast mining front, with bulldozers and front-end loaders.
- Drilling and charging of blast holes, followed by blasting, where necessary. Vibration levels and fly rock occurrence will be recorded during each blast and used to plan subsequent blasts.
- Excavation, loading, hauling and transport of overburden, interburden and coal. The interburden and coal will be transported to the existing Grootegeluk Coal Mine plants while the overburden from the initial box-cuts will be placed on the Grootegeluk Coal Mine Dump 6.
- Roll-over mining will be practised after the construction of the initial box-cuts.
- Constructing and operating a stormwater management infrastructure, that connects to the existing Grootegeluk Coal Mine stormwater management system, comprising diversion berms, collection channels, pipelines and sumps.
- Constructing and operating utilities such as a fire water tank, raw water dams, sanitation facilities and electricity supply infrastructure.
- Constructing and using the supporting infrastructure such as offices, waste management facilities, access and haul roads, pipelines and fencing.

4.0 SOCIAL BASELINE

4.1 Socio-economic demographics

4.1.1 Population

The population within the Lephalale Local Municipality was 115 767 in 2001 and increased significantly to 140 240 in 2016.⁴ Table 4 shows the population profile taking into consideration ethnicity and gender. According to the official census of 2011, the number of households in the Lephalale Local Municipality increased from 20 277 in 2001 to 29 880 in 2011. In 2016, the number of households increased to 43002.⁵ The official census of 2011 indicated that the Lephalale Local Municipality household size increased from 3.5 to 3.9. The Lephalale Local Municipality 2019/20 IDP indicates a smaller average household size of 3.2.⁶ The official census of 2011 indicated a 35.8% population increase between 2001 and 2011, reaching 115,767 in 2011).⁷ According to the Lephalale Local Municipality 2019 IDP, the 2019 population is estimated at 140,240, a growth rate of slightly more than 21% from 2011. Of interest, is that the 2019 working-age group (15-64) forms almost 69% of the population.⁸

Table 4: Population profile

		Black	Coloured	Indian	White	Other	Male %	Female %	Total
Limpopo Province		97%	0.2%	0.2%	2.5%	0.1%	50%	50%	5 391 455
Waterberg District Municipality		91.2%	0.5%	0.4%	7.6%	0.3%	52%	48%	679 316
Lephalale Local Municipality		91%	0.1%	0.3%	7.9%	0.3%	51%	49%	115 767
Ward 3		86.6%	0.6%	0.1%	12.5%	0.5%	52%	48%	11 138

⁴ (Golder Associates Africa 2020)

⁵ (Lephalale Local Municipality 2019a:39)

⁶ The reasons for this substantial change in the household size trend is unclear at this stage, within the constraints of the limited statistics available. Household size is related to a number of indicators, one of which indicates changes in societal structure that may vary over time.

⁷ Other sources indicate the total 2011 population as 115,450 ((Golder Associates Africa 2020)

⁸ (Lephalale Local Municipality 2019a:38)

4.1.2 Ethnicity and language

4.1.3 Education

The percentage of individuals in the Limpopo Province with no formal education has shown a decreasing trend since 2011, from 8.9% down to 6% in 2016.⁹ In 2013, Statistics South Africa recorded 40% of the Limpopo population as having reached secondary education, but less than 10% had achieved post-matric qualifications.¹⁰

The education levels in the area, as determined during the 2011 census, are shown in Table 5.

Table 5: Education level

	No schooling	Some primary	Completed primary	Some secondary	Completed secondary	Higher
Limpopo Province	17%	12%	4%	36%	27%	8%
Waterberg District Municipality	13%	14%	5%	37%	24%	7%
Lephalale District Municipality	10%	13%	5%	40%	24%	8%
Ward 3	14%	19%	9%	38%	14%	6%

* Statistics South Africa, 2011

Challenges experienced by school-going children include poor road conditions, a lack of transport to schools, a lack of water or an inadequate supply thereof, a lack of provision for disabled learners to attend school, mismanagement of funds, overcrowding of classrooms and increased teenage pregnancies.

The Lephalale Local Municipality has 94 educational facilities in total. Generally, there is an educational facility within a 30-minute walking distance for 95% of the population, but primary schools are perceived to be more easily accessible than secondary schools. Secondary schools do not have sufficient numbers of mathematics, and science teachers and the area lacks technical high schools.

The Further Education and Training College is located in Onverwacht and caters for the training needs of the entire Waterberg District Municipality.¹¹

4.1.4 Economic activities

Lephalale is the fastest growing town in the Waterberg district, which has abundant natural resources with potential for entrepreneurship and economic development. The economy is dominated by mining (platinum, iron ore, coal, diamonds), tourism and agriculture. The Waterberg District Municipality is the largest platinum producing area in the Limpopo Province. The growing energy demand drives the development of coal and petroleum production in the Lephalale area.

⁹ (Yes Media CC 2018)

¹⁰ (Golder Associates Africa 2020)

¹¹ (Lephalale Local Municipality 2016)

The coal resource in the Waterberg field is estimated at 76 billion tonnes, which is more than 40% of the national coal reserve. Mining is the highest GDP contributor to Gross Domestic Product (GDP) in the district at 47.4%.¹²

The renowned Biosphere Reserve is found in the district.

The agricultural potential of the sector has not yet been reached. Until recently, the local economy was dominated by Exxaro's Grootegeeluk Coal Mine and Eskom's Matimba Power Station. Lephalale is currently in the final stage of considerable public-sector investment, estimated at R140 billion over the past six years, for the construction of Medupi Power Station.¹³

One of the government's key priorities is to increase economic growth and to promote social inclusion. The contribution of mining to the Lephalale Local Municipality GDP is major at 59.21%. Tourism, game farming, commercial hunting, red meat production and manufacturing also contribute significantly to the local economy.

The Gross Value Added (GVA) per sector of the economy within the Lephalale Local Municipality between 2008 and 2010 is shown in Table 6.¹⁴

Table 6: Gross Value Added per economic sector in Lephalale at constant 2005 prices (Rm)

Sector	2008	2009	2010	2010 %
Agriculture, forestry, and fishing	189	168	171	3.9
Mining and quarrying	1415	2456	3148	71.4
Manufacturing	81	62	63	1.4
Electricity, gas, and water	179	120	125	2.8
Construction	45	42	42	0.9
Wholesale and retail trade, catering, and accommodation	218	192	196	4.4
Transport, storage, and communication	191	185	193	4.4
Community, social and personal services	58	53	53	1.2
Finance, insurance, real estate, and business services	257	228	230	5.2
General government	196	184	190	4.3
Total	2829	3690	4411	100.0

Source: Quantec, 2010 Regional Economic Database in Lephalale 2019/20 IDP

The contribution of mining within the Lephalale Municipal area to the Waterberg District Municipality's GDP is significant at 59.21%. Electricity contributes 11.33% of the Waterberg District Municipality's GDP and Lephalale Local Municipality's contribution to the Waterberg electricity sector is 69.65%. The Medupi Power Station near Lephalale will have a notable influence on the future development of the area. The three economic clusters that are most relevant to Lephalale Local Municipality are firstly coal and petrochemical, secondly red meat and thirdly tourism.¹⁵

Agriculture is the sector that employs the largest part of the workforce (38.85%) in the Waterberg District Municipality. It is followed by community services (15.71%). Tourism and manufacturing contribute to the local economy to a lesser extent.

¹² (Waterberg District Municipality 2019:131)

¹³ (Lephalale Local Municipality 2019a:106)

¹⁴ (Lephalale Local Municipality 2019a:109–110)

¹⁵ (Lephalale Local Municipality 2019a:106)

The regional GVA for 2010 is shown in Table 7.

Table 7: Regional Gross Value Added (2010)

Industry	WDM	LLM
Agriculture, forestry, and fishing	3%	4%
Mining and quarrying	51%	71%
Manufacturing	3%	1%
Electricity, gas, and water	2%	3%
Construction	2%	1%
Wholesale and retail trade, catering, and accommodation	8%	4%
Transport, storage, and communication	8%	4%
Finance, insurance, real estate, and business services	12%	5%
Community, social and personal services	3%	1%
General government	9%	4%

Source: Quantec, 2010

The Lephalale municipality received an unqualified audit from the Auditor-General from 2014/15 to 2016/17. The 2017/18 audit was qualified.¹⁶

4.1.5 Economic employment and income profile

The provincial and regional employment profile is summarised in Figure 3.

Most of the people in Lephalale who qualify to be employed (i.e. within the working-age group, South African citizen or with appropriate work visa) are employed with either Exxaro Grootegeeluk or Eskom. Exxaro currently employs 7 432 people of which 69% are from the Limpopo Province (both permanent and contractor employees).

The unemployment rate measures the percentage of employable people in the country's workforce who are over the age of 16 and who have either lost their livelihoods or have unsuccessfully sought jobs previously and are still seeking employment. This category also includes children, pensioners and disabled persons.

¹⁶ (Yes Media CC 2018)

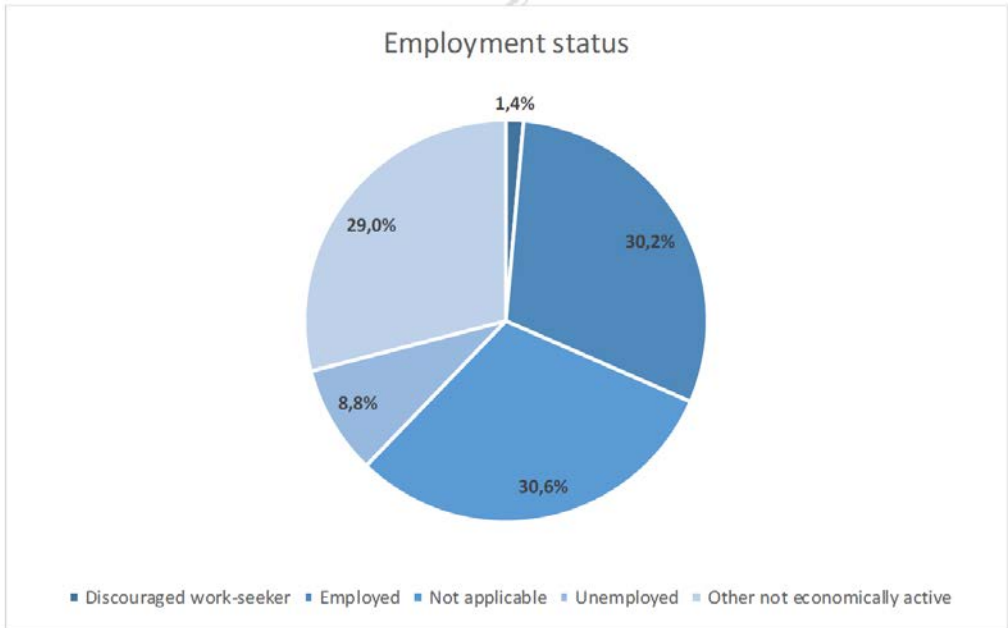


Figure 3: Employment Profile in the Local Study Area (Statistics South Africa, 2018)

About 60% of the population earn between R9 600 and R76 800 per year. The average for the Lephalale area is R30 000 per year – see Figure 4.

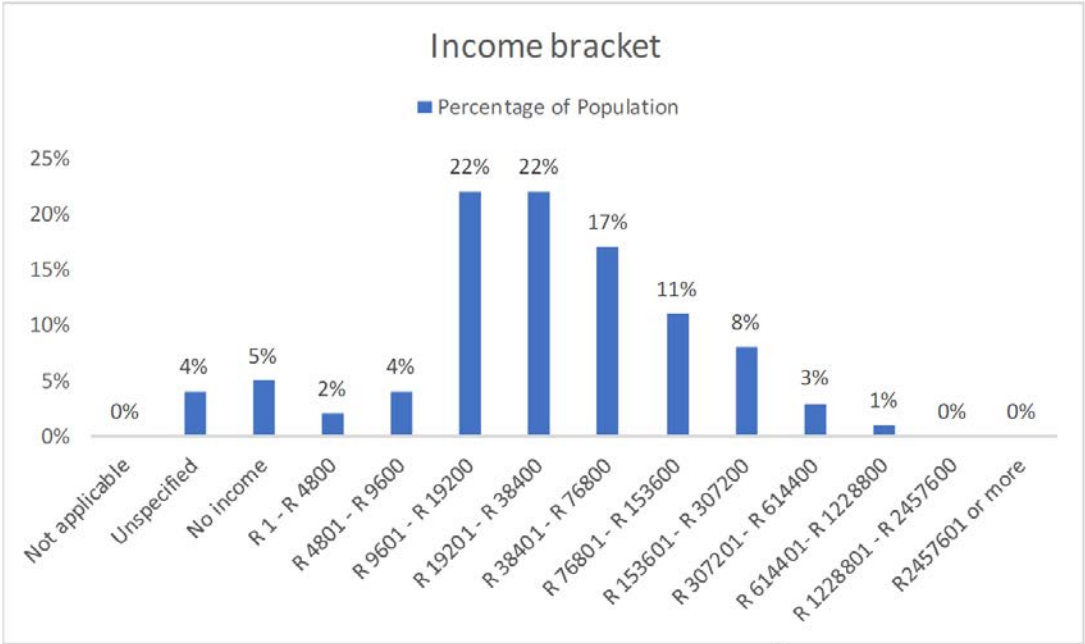


Figure 4: Income Profile

There was a significant increase in the population of Lephalale after 2012. This population increase is associated with the construction of the Medupi Power Station and the expansion of the Waterberg coalfield. The Waterberg SEAT Report (2012) estimated the population in the Lephalale Local Municipality to be close to 94 000.

The community survey undertaken in 2016 recorded the population in the Lephalale Local Municipality as being 140 240.¹⁷ The population density in the area, at approximately 10.2 people/km², is lower than the national average of roughly 48.89 people/km².¹⁸

4.1.6 Cultural heritage

The Turfvlakte project area is situated on the Grootegeluk Formation close to Lephalale.

The Karoo Supergroup is renowned for its fossil wealth. It is marked as Undifferentiated Strata of the Karoo Supergroup, but correlates with the Vryheid Formation (Pe, Pv), Eccu Group and the Grootegeluk Formation, which is rich in plant fossils such as the Glossopteris flora, represented by stumps, leaves, pollen and fructifications. This formation is early to mid-Permian (Palaeozoic) in age and consists of sandstone, shaley sandstone, grit, conglomerate, coal and shale. Coal seams are present in the Grootegeluk Formation within the sandstone and shale layers of the horsts and grabens. Fossils are mainly present in the grey shale, which is inter-layered between the coal seams.

4.2 Social and physical infrastructure

4.2.1 Health

According to the 2019 Lephalale Local Municipality Annual Report¹⁹, primary health care is not a function of the Lephalale Local Municipality, but it is provided to the municipality by the district and the provincial departments. Clinics in Lephalale offer primary health care, and there are five main clinics, equipped with mobile units, offering these services to the scattered villages and farms. They are responsible for the distribution of medicines, prenatal care for pregnant women, and testing for chronic diseases.

The ambulance service within the municipality is provided by the Provincial Department of Health and Social Development and it is coordinated at the District. There are two ambulance centres in the municipality, located and based at the two hospitals within the municipal boundaries. The service centres are in Onverwacht at the Lephalale hospital and the satellite service centre at Witpoort Hospital.²⁰ According to the Local Economic Development Strategy,²¹ the health care challenges in the Lephalale Municipality included, but were not limited to:

- Inadequate attraction and retention of skilled personnel as a result of the municipality's geographic location and lack of affordable accommodation
- An influx of people into the municipality as a result of economic development has put more pressure on the referral centres, and the community members are not confident about the services provided at the primary health care centre
- Lack of adequate financial resources for the acquisition of advanced medical equipment. Patients seek medical attention when they are at an advanced stage of ailment, and this leads to high mortality rates in children and adults.

¹⁷ (Statistics South Africa 2016 2016)

¹⁸ (World Population Review 2020)

¹⁹ (Lephalale Local Municipality 2019b:93)

²⁰ (Lephalale Local Municipality 2019b:93)

²¹ (Lephalale Local Municipality 2016)

4.2.2 Water and sanitation

Service delivery in Lephalale is relatively high, with 73.2% of individuals receiving water from a regional or local service provider. Access to water may decrease further away from the central business district of the town. The water sources utilised by people within the Lephalale Municipal area are shown in Figure 5.

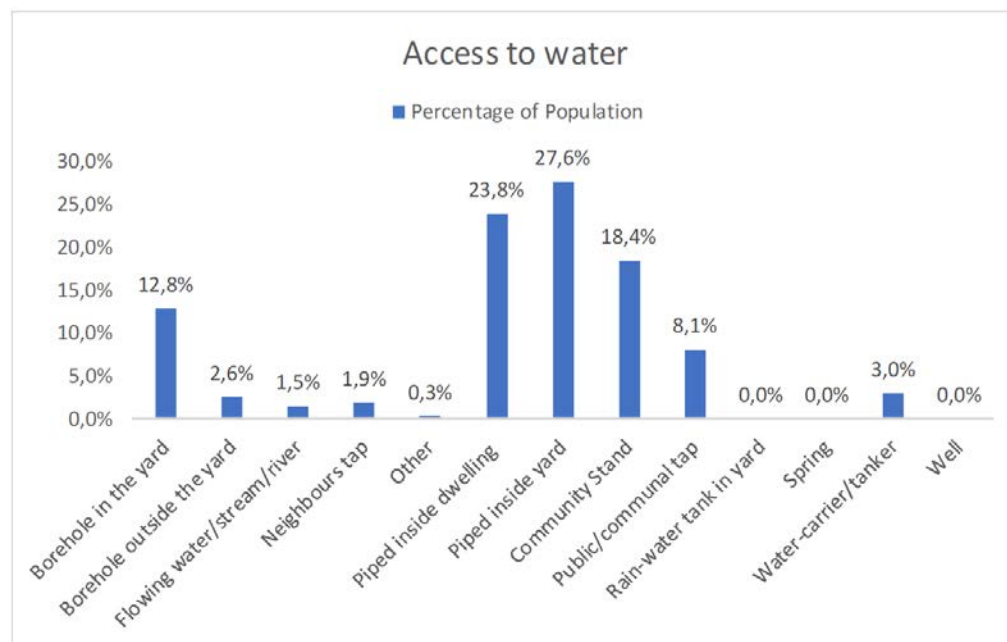


Figure 5: Sources of water used by residents in Lephalale Municipal area

The Lephalale Local Municipality lists the following challenges regarding water:²²

- The catchment in which the Mokolo Dam is located is currently in deficit.
- Dry boreholes due to lack of rain.
- Aged bulk infrastructure in rural and some urban areas.
- Illegal water connections in rural areas affect water availability.
- Non-availability of groundwater in rural areas.
- Unplanned growth of rural villages makes it difficult to provide water to all.
- Insufficient water supply to informal settlements and farms.
- Implementation of water conservation and water demand management programme.
- Insufficient budget for operation and maintenance of water infrastructure in rural villages.

The Lephalale Local Municipality is very aware that the availability of sanitation facilities promote not only the dignity of people but also improves their health. Areas without proper sanitation systems give rise to waterborne diseases

²² (Lephalale Local Municipality 2019a:88)

like cholera, diarrhoea, typhoid, etc. The Lephalale Local Municipality ranked 108th in South Africa for flush toilets connected to a sewerage system.²³ Only about 42.6% of the population have access to septic tank/French drain systems, or flushing or chemical toilets, which is almost double the rate of the Limpopo Province.

Lephalale is situated on relatively flat land. Sewers are installed at slopes exceeding the natural slope of the land and become so deep over relatively short distances, that the sewage must be pumped. There are 38 pumping stations in Onverwacht and Ellisras.

Sanitation in the rural areas consists of informal pit latrines or Ventilated Improved Pit Latrines. It is estimated that 5% of the households have no sanitation service. There is no waterborne sanitation in the rural areas, where the level of service varies from no service to a basic level of service.

Approximately 14 255 households require an improved sanitation system. The sanitation in Thabo-Mbeki and Thabo-Mbeki Ext 1 is mostly septic tanks with French drains. The Central Business District has access to full waterborne sanitation that drains into oxidation ponds, but it is operating at maximum capacity. The current situation is summarised in Figure 6.

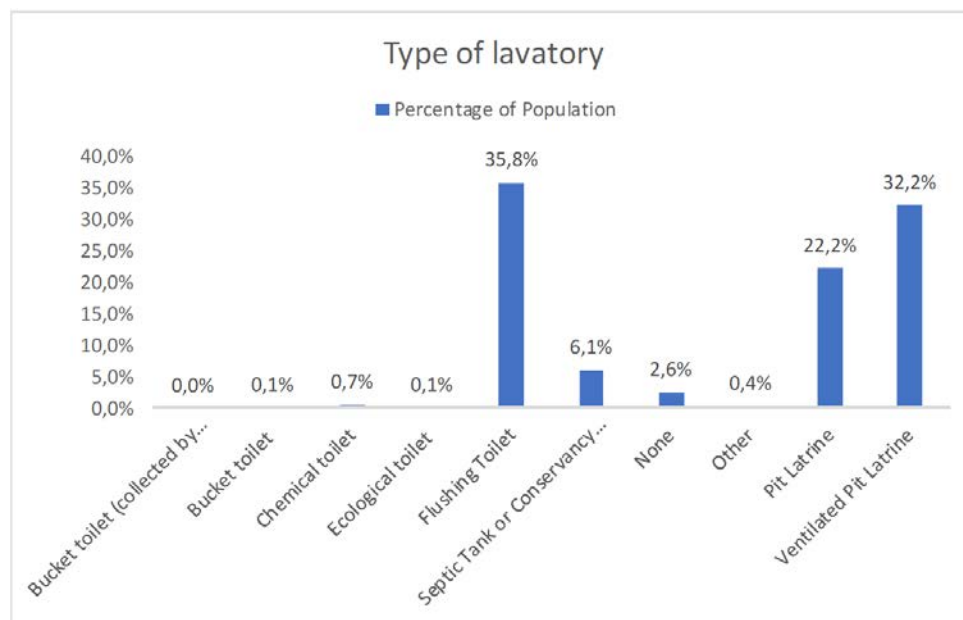


Figure 6: Sanitation systems in the Lephalale Local Municipality

Sanitation delivery challenges in the Lephalale area include:²⁴

- Old infrastructure. About 94% of the waterborne sanitation infrastructure in the Municipality is more than 20 years old, and about 15% of the sanitation network has been identified as being in a poor to very poor condition. The system needs renewal and upgrading.
- Inadequate budget for operation and maintenance of sewer infrastructure.

²³

²⁴ (Lephalale Local Municipality 2019b:60, Waterberg District Municipality 2019:92)

- Insufficient capacity at wastewater treatment works.
- Organisational structure not strategically aligned to execute operational requirements.
- Oxidation pond in Marapong operating above capacity.

4.2.3 Electricity

The sources of electricity utilised by people within the Lephalale Municipal area are shown in Figure 7. About 9.2% of the people, mainly those who live in villages further away from the central business district, do not have any access to electricity.

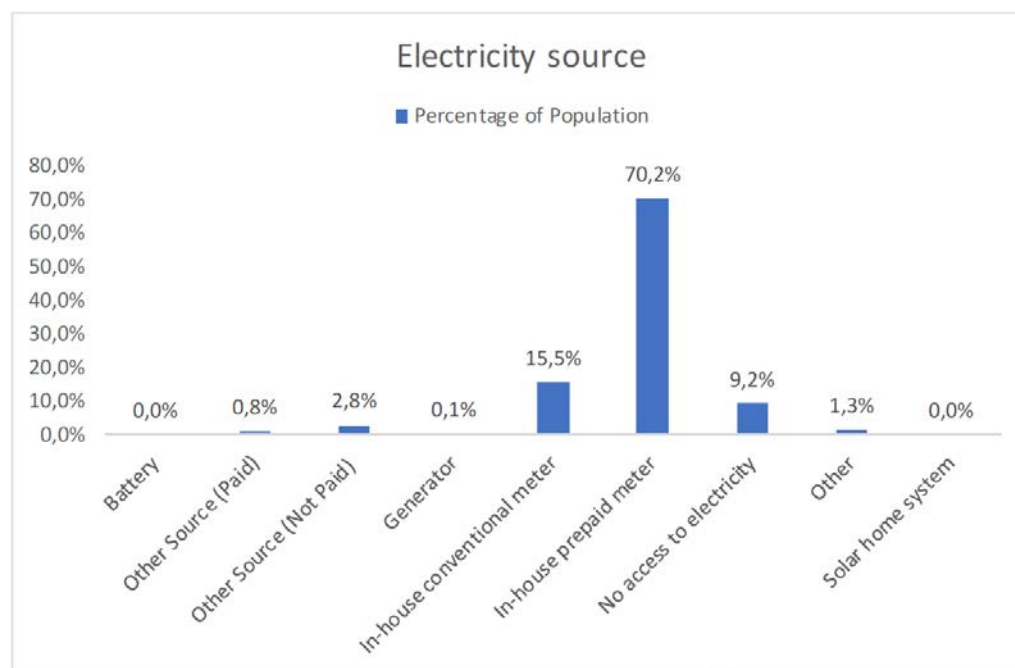


Figure 7: Sources of electricity

The electricity-related challenges for the Lephalale area include:²⁵

- Theft of copper cables, especially in rural areas
- Replacing copper cables on the internal electricity network with aluminium cables, which are less prone to theft
- An overhead line from Onverwacht and back from town to Onverwacht sub-station
- Poor response time to electricity breakdowns due to lack of resources (transport)
- Inconsistent Eskom billing the Municipality
- Unplanned housing extensions in rural villages and
- Lack of capacity in the maintenance department.

²⁵ (Golder Associates Africa 2020)

5.0 KEY ISSUES CONSIDERED

The following section provides a summary of the key issues and questions raised during the desktop and stakeholder engagement process²⁶ as well as the aspects from a macro and expert opinion.

Please refer to Table 8 for a summary of the key social issues raised (in alphabetical order).

Table 8: Summary of key social aspects and issues raised during the stakeholder engagement process.

Focus area	Question/ Issues/ Concern/ Comment
Ecology	<ul style="list-style-type: none"> ■ What is the progress on the rehabilitation of pans at Sandloop²⁷? ■ What is the progress on the relocation of baboon spider?
Economic impact	<ul style="list-style-type: none"> ■ The project does not foresee additional employment opportunities as it is an expansion of the current operation. ■ The project will ensure the retention of the current workforce for the next 10 years. ■ The project will have a negative impact on Manketti Guesthouse, which will be within the blasting area.
Health and safety	<ul style="list-style-type: none"> ■ Deterioration of roads, which will pose a safety risk to motorists. ■ Increased traffic volumes. ■ Presence of heavy goods vehicles. ■ Road accidents, mainly impacting the locals who are not accustomed to heavy traffic and heavy vehicles.
Intrusion impacts	<ul style="list-style-type: none"> ■ Increased dust levels which may result in respiratory problems for the locals, guesthouse, and construction workers. ■ Road infrastructure for the project will be within the current mine property, but dust outfall might increase. ■ The project will create an increased dust outfall for Mankete guesthouse. Dust levels must be managed carefully.
Mine closure	<ul style="list-style-type: none"> ■ Has the end land use considered the amount of topsoil to be stockpiled?
Population influx	<ul style="list-style-type: none"> ■ Increased pressure on local resources, infrastructure, and social services.

²⁶ (dBAcoustics 2019)

²⁷ The pans referred to are located at the existing Grootegeluk Coal Mine area and not in the Turfvlakte project area.

Focus area	Question/ Issues/ Concern/ Comment
	<ul style="list-style-type: none"> ■ Increased social pathologies (e.g. drug and alcohol abuse, prostitution, crime and violence, increased incidence of sexually transmitted diseases and other infectious diseases).
Positive impacts	<ul style="list-style-type: none"> ■ Community development as a result of SLP and related activities by the mine. ■ Increased local and regional economic benefit. ■ Increased tax revenue. ■ Long-term employment opportunities. ■ Skills development and transfer.
Socio-economic	<ul style="list-style-type: none"> ■ Consultation needs to be robust and involve the municipal manager's office and the councillors before scheduling meetings. ■ Loss of employment. ■ What is the economic impact in the area?
Water	<ul style="list-style-type: none"> ■ How will groundwater contamination be managed? ■ Is the increase in salt in the surface water naturally occurring or as a result of the mining operations? ■ Were the agricultural and farming unions consulted as they have previously raised concern about groundwater? ■ What is the extent of the impact on groundwater users in the area? ■ What will the larger water use impacts be as a result of the water uses to be undertaken by the mine?

6.0 SOCIAL IMPACT ASSESSMENT AND RECOMMENDED MITIGATION MEASURES

An impact assessment and the associated mitigation measures considers social and related impacts and aspects raised by stakeholders during the environmental assessment process. In addition, other aspects are included in the assessment process based on macro circumstances as well as expert opinions. The SIA will consider the issues and aspects identified in Table 8.

Socio-economic implications associated with the proposed project are grouped according to the respective project phase, e.g. construction, operation and decommissioning. Appropriate mitigation measures are recommended to reduce negative impacts and enhance positive ones. Where relevant, reference is made to applicable specialist studies, in which more comprehensive information is provided.

6.1 Construction phase

6.1.1 Impacts

The construction phase impacts include:

- Positive impacts: Increased economic revenue and sustaining existing jobs.
- Negative impacts, namely health and safety risk and population influx.

These are discussed further in the following sections.

6.1.1.1 Increased economic revenue

During the construction phase, Exxaro will require various goods and services. This requirement is likely to generate economic opportunities for local businesses, provided they can meet the Client's procurement requirements. It is, however, anticipated that some required goods and services might not be available in the local study area. In this case, Exxaro will procure from businesses elsewhere in the country or outside the country.

It is anticipated that the construction workforce will be housed in local accommodations (private homes, guest houses or rental options); this will also contribute to the growth of the local economy. Provided that a significant proportion of money derived from wages earned would likely be spent in the vicinity of the project area, it is expected to create substantial flows of revenue within surrounding communities, thus acting as a catalyst for growth in the formal and second economy.

6.1.1.2 Health and safety risk

During the construction phase, Exxaro anticipates constructing limited infrastructure on surface in support of coal mining operation viz., haul roads connecting the proposed pits to the existing Grootegeeluk Coal Mine operations, laydown area for the mining equipment and offices, water management infrastructure (sumps and pipelines), waste management area (waste skips), and a sub-station. Consequently, this will result in:

- Increased dust levels which may result in respiratory problems for the locals, guesthouse and construction workers;
- Increased traffic volumes;
- Presence of heavy goods vehicles;
- Road accidents, mainly due to increased road traffic, and

- Further deterioration of roads, which will pose a safety risk to motorists.

Additionally, noise affects humans differently, and the new noise which will be coming from the mining establishment and the associated activities will depend upon the intensity of the sound, the length of time of exposure and how often over time the ear is exposed to it. According to DBAcoustics²⁸, noise intrusion levels will be insignificant during the construction phase of the individual open cast pits (Pit 1 and Pit 2). A comprehensive assessment of these impacts will be provided in separate specialist studies undertaken by Golder, Air Quality, Visual, and Noise Impact Assessment for the proposed project.

6.1.1.3 Population influx

Other mining companies are already operating in the area. It is therefore likely that the presence of mines in the area has resulted in the influx of people in search of jobs and business opportunities. Considering the proposed project, it is anticipated that employment seekers and other business seekers will continue to migrate into the project areas in search of opportunities. Consequently, this will have social implications such as:

- Increased pressure on local resources, infrastructure and social services which are already not adequate for the local people; and
- Increased social pathologies such as drug and alcohol abuse, prostitution, crime and violence, increased incidence of sexually transmitted diseases and other infectious diseases.

Additionally, population influx might accelerate the development of informal settlements closer to the project area because opportunity seekers will require accommodation. Unfortunately, informal settlements tend to be associated with poor access to various services such as water, sanitation and electricity. This scenario results in social and health implications such as:

- Increased dependency on government for the provision of goods and services;
- Increased pressure on the supply of available goods and services; and
- Increased social pathologies, as mentioned above.

6.1.2 Mitigation measures

The proposed mitigation measures for the construction phase impacts are shown in Table 9.

Table 9: Mitigation measures for the construction phase impacts

Impact	Mitigation measures
Employment opportunities	<ul style="list-style-type: none"> ■ A monitoring system should be put in place to ensure that Exxaro's recruitment policy is adhered to. ■ Communities within the vicinity of the mine should be given special consideration in terms of the benefits arising from the project because they will be the most affected by the project. It is recommended that the following mitigation measures be implemented:

²⁸ (dBAcoustics 2019)

Impact	Mitigation measures
	<ul style="list-style-type: none"> ■ If not currently in place, a local skills database must be developed and updated regularly. The skills database should be used for recruitment purposes to minimise the probability of nepotism or corruption during the recruitment process.
Increased economic revenue	<ul style="list-style-type: none"> ■ Exxaro shall develop and implement its housing model, which will be integrated within the local areas and aligned with the IDP of the region. The model will ensure that employees are accommodated in their own formal accommodation located within the metropolitan frameworks of the region where the proposed operation will be based. ■ Exxaro shall give first preference to appropriate subcontractors/SMMs located in the surrounding communities, followed by those located in the municipal area and lastly those situated elsewhere or outside the province.
Population influx	<ul style="list-style-type: none"> ■ Additionally, relevant stakeholders should be engaged and consulted during the development of the detailed influx management plan. ■ Exxaro are to focus their efforts on the need for a local recruitment policy, workforce management, promotion of regional diversified growth strategies, implementation of health and safety education programmes and spatial planning, administration, and resource allocation. ■ Regarding any emerging recruitment opportunity, priority shall be given to locals, thus reducing the need for outsiders.
Risk of community health and safety	<ul style="list-style-type: none"> ■ A community awareness campaign to be implemented in the surrounding communities to sensitise community members to traffic safety risks and health and communicable disease awareness. ■ Exxaro shall be implementing dust-and noise suppression measures in areas where vehicles will use unsealed roads. That must be accompanied by proper road markings and signs. ■ Exxaro will need to engage with communities using a dedicated community liaison officer and have in place an effective stakeholder engagement plan, inclusive of a grievance redress mechanism for communities to access which will be used by project-affected stakeholders to lodge complaints. ■ Exxaro's community health and safety plan shall be in place and updated regularly. Measures should be in place to ensure the health and safety of the neighbouring guesthouse patrons and staff.

Impact	Mitigation measures
	<ul style="list-style-type: none"> Roads must be adequately maintained to prevent deterioration of road surfaces due to heavy vehicle traffic. The time for blasting activities should be communicated to the surrounding landowners and the local population. – This will be done via signage on the road and by ensuring that blasting times are limited to a specified time of day, where possible.

6.1.3 Rating of impacts

In this section, construction phase impacts are rated based on their significance before and after mitigation (Table 10).

Table 10: Rating of construction phase impacts

Indicator of the potential impact	Pre-mitigation					Post-mitigation				
	Magnitude	Duration	Scale	Probability	Significance	Magnitude	Duration	Scale	Probability	Significance
Sustain current employment into the future	2	2	2	4	+ 24	2	4	2	4	+ 32
Increased economic revenue	4	2	2	3	+ 23	8	2	2	4	+ 48
Health and safety risk	8	2	2	4	48	4	2	2	3	24
Population influx	6	4	3	4	52	4	2	3	3	27

6.2 Operational phase

6.2.1 Impacts

The operational phase impacts include:

- Positive impacts, namely skills transfer and development, community development and regional economic development; and
- Adverse impact, health, and safety risk.

These are discussed further in the next sections.

6.2.1.1 Skills transfer and development

As per Exxaro's SLP, employees will continue to be exposed to a human resources development strategy. The skill level of employees will vary from unskilled to highly skilled. Consequently, employees will benefit from work experience as well as formal training programmes, especially those individuals who start with a low-level skillset.

6.2.1.2 Community development

During the operational phase, it is anticipated that Exxaro will continue contributing positively to the community development of the project-affected communities as per Exxaro's SLP. These development initiatives, especially if implemented in consultation with other community development role-players in the area, can contribute considerably towards sustainable development within the project area.

6.2.1.3 Regional economic development

The government will receive royalty and tax payments from Exxaro the proposed project involves the extraction of a non-renewable commodity. Exxaro will continue to invest capital into their SLP, most of these funds will be used for the implementation of Local Economic Development (LED) projects, which are intended to fast track sustainable economic development in the site-specific and local study area. Additionally, the employee's wage bill will result in a substantial injection of cash into the economies of the local and regional study areas. Consequently, stimulating the formal and informal retail and service sectors and downstream secondary industries.

6.2.1.4 Health and safety risks

The health and safety risks which will be experienced during the construction phase, as discussed in section 6.1.1.2, will probably continue into the operational phase of the project. There is also a perception that the project might have an impact on underground water. This impact includes the potential contamination and availability of groundwater to neighbouring end users. The perceptions also highlighted an increase in salt particles to the surface water that can impact rivers and streams. These impacts and appropriate mitigation measures are further discussed in separate specialists reports viz., Groundwater Baseline and Impact Assessment Report for the Proposed project (Golder, 2020).

6.2.2 Mitigation measures

The proposed mitigation measures for the operational phase impacts are shown in Table 11.

Table 11: Mitigation measures for operational phase impacts

Impact	Mitigation measure
Skills transfer and development	<p>As per Exxaro's SLP, Exxaro will:</p> <ul style="list-style-type: none"> ■ Comply with the requirements of the Skills Development Act, which includes the submission of a Workplace Skills Plan and an Annual Training Report as per the Sector Education and Training Authority's requirements. ■ Appoint a dedicated skills development facilitator within six months of the commencement of operations. ■ Submit a five-year plan for learnerships at once operations commence. ■ Provide employees with the opportunity to participate in mentoring relationships with an individual they feel could add value to their growth and development. ■ Implement a bursary scheme which aims to develop suitable students who once they have completed their studies are afforded professional career opportunities within our organisation.
Community Development	<p>The community development aspects will be carried out as per Exxaro's SLP. During this process, Exxaro will engage stakeholders in the area to gauge whether they can align with any of their efforts to collaborate on some development initiatives planned for the communities. Additionally, the selection of project beneficiaries should be fair and directly affected parties should be given first preference.</p>
Regional economic development	<ul style="list-style-type: none"> ■ Exxaro shall pay royalties and tax to the government. ■ Exxaro shall adhere to their SLP commitments.

Impact	Mitigation measure
Health and safety risks	<ul style="list-style-type: none"> The mine shall be maintained during its lifetime in a manner that ensures a safe working environment for mine personnel. Ensure a safe environment for neighbouring communities. Adherence to rigorous operational health and safety programmes.
Air Quality	<ul style="list-style-type: none"> Exxaro shall develop measures to comply with regional air quality studies recommendations.

6.2.3 Rating of impacts

In this section, operational phase impacts are rated based on their significance before and after mitigation (Table 12).

Table 12: Rating of operational phase impacts

Indicator of the potential impact	Pre-mitigation					Post-mitigation				
	Magnitude	Duration	Scale	Probability	Significance	Magnitude	Duration	Scale	Probability	Significance
Skills transfer and development	2	4	2	3	+ 24	8	4	2	4	+ 56
Community development	2	4	2	3	+ 24	8	4	2	4	+ 56
Regional and economic development	4	4	3	3	+ 33	6	4	3	4	+ 52
Sustain current employment into the future	2	2	2	4	+ 24	2	4	2	4	+ 32
Health and safety risk	6	4	2	4	48	2	4	2	3	24

6.3 Decommissioning and closure phase

6.3.1 Impacts

The decommissioning and closure phase impacts include loss of employment, reduced regional economic development and reduced community investment.

These are discussed further below:

6.3.1.1 *Loss of employment*

During the decommissioning and closure phase, the operational phase workforce will lose their jobs. Unfortunately, this may contribute to various adverse social consequences in the municipality and labour sending area such as:

- Increase or return of the unemployment rate to previous levels within the project area;
- Financial hardship and poverty;
- Family tensions and breakdown;
- Alienation, shame, and stigma; and
- Crime.

Nevertheless, Exxaro will invest in community development initiatives to lessen negative socio-economic impacts associated with poverty.

6.3.1.2 *Reduced regional economic development*

There will be reduced local spending by Exxaro and its employees, including royalty and tax payments. Consequently, local businesses and the area may be affected from a financial perspective.

6.3.1.3 *Reduced community investment*

All community development initiatives will be handed over to relevant parties by Exxaro; after that, there will be a reduction in local community development investment from Exxaro.

6.3.2 *Mitigation measures*

The proposed mitigation measures for the decommissioning and closure phase impacts are shown in Table 13

Table 13: Mitigation measures for decommissioning and closure phase impacts

Loss of employment	<ul style="list-style-type: none"> ■ Timely and adequate consultation with employees who are dependent on the mine for employment. ■ Assisting employees in seeking alternative employment at other power plants or related facilities. ■ Training and education of employees to equip them with skills that could benefit them in other industries. During the operational phase, members of the workforce will be encouraged to obtain skills or qualifications that are recognised by the National Qualifications Framework and are registered through the Mining Qualifications Authority. These qualifications include non-mining

	<p>skills that will assist employees in areas other than mining.</p> <ul style="list-style-type: none"> ■ Initiatives should be aligned with SLP commitments relating to downscaling and retrenchment.
Reduced regional economic development	Engage local and regional government concerning the decommissioning phase.
Reduced community investment	Exxaro shall develop exit strategies for all its community development initiatives.

6.3.3 Rating of impacts

In this section, decommissioning phase impacts are rated based on their significance before and after mitigation (Table 14)

Table 14: Rating of decommissioning phase impacts

Indicator of the potential impact	Pre-mitigation					Post-mitigation				
	Magnitude	Duration	Scale	Probability	Significance	Magnitude	Duration	Scale	Probability	Significance
Loss of employment	8	5	2	5	75	6	5	2	5	65
Reduced regional economic development	6	5	3	5	70	4	5	3	5	55
Reduced community investment	8	5	2	5	75	6	5	2	5	65

7.0 CONCLUSION

None of the adverse impacts has been rated as a high negative significant impact. Other constructions, operation and decommissioning phase impacts have been rated as moderate negative and significant positive impacts, respectively. As shown in Table 15, if mitigation measures are implemented accordingly, it is anticipated that the consequence and probability of moderate negative impacts will be reduced. In contrast, any positive impacts will be enhanced to maximise benefits. Given the above, it is strongly recommended that the mitigation measures

described in Section 6.1.2, 6.2.2 and 6.3.2 be incorporated into the Environmental and Social Management Plan for the proposed project. Additionally, measures must be put in place to monitor and assess the implementation of these mitigation measures and take corrective action where necessary.

Table 15: Summary of impact ratings

Impacts	Significance rating	
	Pre-mitigation	Post-mitigation
Construction phase		
Sustain current employment into the future	+ 24	+ 32
Increased economic revenue	+ 23	+ 48
Health and safety risk	48	24
Population influx	52	27
Operational phase		
Sustain current employment into the future	+ 24	+ 32
Skills transfer and development	+ 24	+ 56
Community development	+ 24	+ 56
Regional and economic development	+ 33	+ 52
Health and safety risk	48	24
Decommissioning and closure phase		
Loss of employment	75	65
Reduced regional economic development	70	55
Reduced community investment	75	65

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Signature Page

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APPENDIX A

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