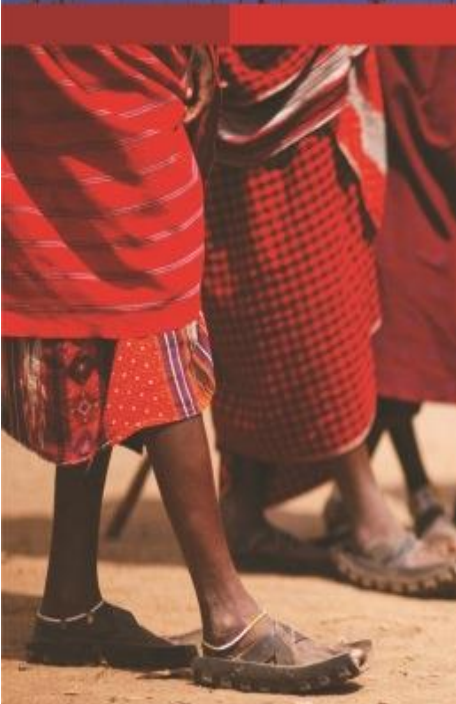




DIGBY WELLS
ENVIRONMENTAL



Environmental Regulatory Processes relating to the Thubelisha, Trichardtsfontein and Vaalkop Mining Right Areas

Addendum to the Trichardtsfontein Social Impact Assessment Report

Project Number:

SAS3869

Prepared for:

Sasol Mining (Pty) Ltd

August 2017

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Report Type:	Addendum to the Trichardtsfontein Social Impact Assessment Report
Project Name:	Environmental Regulatory Processes relating to the Thubelisha, Trichardtsfontein and Vaalkop Mining Right Areas
Project Code:	SAS3869

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EXECUTIVE SUMMARY

This document presents the results of the Social Impact Assessment (SIA) amendment for the proposed consolidation of the Twistdraai Colliery: Thubelisha Shaft (TCTS), Trichardtsfontein and Vaalkop Mining Right areas, located near the town of Trichardt in Mpumalanga Province, South Africa. The terms of reference for this study are as follows:

- To augment and update the existing socio-economic baseline profile contained in the Social Impact (SIA) report completed in 2014, with an emphasis on the local (project-specific) area, by means of (inter alia) a desktop assessment;
- To describe the land use of the area not previously assessed (i.e. Vaalkop) affected by the project, informed by a review of input by interested and affected parties (I&APs);
- To investigate the potential impact of subsidence related to underground mining, particularly in terms the proposed township developments;
- To review previously identified impacts, identify changes to these impacts, as well as to identify any new impacts that may result from the consolidation of the mining areas; and
- To develop feasible, practical and cost-effective mitigation and enhancement measures to ameliorate the significance of negative impacts and enhance the benefits of positive social impacts.

Methodology

The study was designed to comply with the relevant national legislative requirements, such as those stipulated in National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) and Mineral and Petroleum Resources Development Act, 2002 (MPRDA) (Act No. 28 of 2002). The activities undertaken as part of the study comprised the following:

- Defining the site-specific, primary and secondary study areas;
- Data collection, including a desktop review, and a review of information from other specialist studies;
- The compilation of an updated baseline profile, including that of the Vaalkop Mining Right area, including information on demographics, education, skills levels, employment, local and regional economic conditions, infrastructure and service delivery, health related issues, spatial development and information pertaining to the prevalent concerns regarding and attitudes towards the proposed project;
- Assessment of impacts on the basis of the desktop review, with the proposed consolidation and proposed high extraction mining and specialist opinion;
- Rating of impacts in terms of their anticipated duration, extent, intensity and probability was carried out in an identical fashion to that of the SIA completed in 2014



for the Trichardtsfontein project. Duration, extent and intensity ratings were combined into a measure of an impact's expected consequence. Consequence ratings, in turn, were combined with probability ratings to give a measure of an impact's overall significance;

- Identification of appropriate mitigation measures to avoid or ameliorate negative social impacts and to enhance positive ones. The rating procedure described above was then repeated to assess the expected consequence, probability and significance of each impact after mitigation. This post-mitigation rating gives an indication of the significance of residual impacts, while the difference between an impact's pre-and post-mitigation ratings therefore represents the degree to which the recommended mitigation measures are expected to be effective in reducing or ameliorating that impact;
- Formulating recommendations regarding the identified mitigation and enhancement measures, as well as other general recommendations that may aid the successful implementation of the project.

Baseline Socio-Economic Profile

The project is located in the Govan Mbeki Local Municipality (GMLM) within the Gert Sibande District (GSDM). The socio-economic characteristics of the population within each of the aforementioned areas are summarised below.

Population and Demographics

The population of the GSDM and GMLM is roughly 1 044 000 and 295 000 respectively (StatsSA, 2012). The distribution of the respective populations within the primary study area (Wards 5, 15 and 25 of GMLM) is characterised as comprising a low population density attributed to extensive commercial farming. More than half of the GSDM population (57%) resides in urban areas. With respect to the GMLM, the largest proportion of the population resides in eMbalenhle (36%), followed by the eMzinoni/ Milan Park/ Sorrento Park settlement cluster (18%). Although Secunda is the economic hub of the GMLM, it only hosts 9% of the population.

The population of the district and local municipal areas is dominated by the Black African race (89% and 81% respectively). The dominant language in both areas is isiZulu; with the primary study area reflecting these trends. With regards to age the youth (individuals between the ages of 14 and 35) comprises the largest age cohort in the district (38%) and local municipality (39%) (StatsSA, 2012). Furthermore, the GMLM is one of only two local municipalities in the district where females do not outnumber males. This can be attributed to the higher prevalence of industries (particularly mining) that employ a dominantly male workforce due to the nature of industrial and mining work.

Education

Within the GSDM, the GMLM has the highest level of functionally literate people at 74% of the population older than 20 years. Only 32% of the GMLM have some secondary education,



which highlights that the population of both municipalities have relatively low levels of education. On average, close to a third (30.9%) of the primary study area's adult population obtained Grade 12. The highest concentration of adults who had no schooling is found in Ward 15 (12.6%). Both Wards 5 and 25 have a significant portion (28.5% and 26.3% respectively) of the adult population who completed a post-matric qualification, ranging from a certificate with Grade 12 to diplomas post PhD-degree.

The IDP (2017-2022) provides no information on the number or state of schools in the project area. Other wards (i.e. Wards 9, 14, 16, 19, 20, 22 and 32) all list the upgrade and/or construction of school(s) as priority community development needs that require urgent attention. Currently schools within Trichardt and its surrounds are experiencing extensive pressure to accommodate an increasing number of learners.

Access to household services

The project area consists of approximately 9 000 households at an average occupancy rate of 3.6 persons per household. Of the 9 000 households, approximately 800 were hovels – the largest number of these (approx. 620) were located in Ward 15. On average, a third of houses (approximately 39.8%) in the project area are rented, with as high as 47.7% in Ward 25. Ward 15 has the largest segment of houses that are owned and fully paid off (20.7%) along with a significant number of houses that are occupied rent free (26.7% against Ward 5's 6.2% and Ward 25's 9.1%).

Water: On average, 83.1% of all households had piped water supplied by a regional/local water scheme (most often the local municipality). However, Ward 15 still had a large proportion of households who relied on a borehole (15.8%) or a roaming water tanker (11.5%) as their primary water source.

Sanitation and toilets: Although the majority of households on average (85%) have access to toilet facilities on par with RDP standards (any flush system connected to either a sewerage system or septic tank), slightly more than a third (34.5%) of households in Ward 15 only have access to a system below RDP standards (no flush system, VIP without ventilation or bucket system).

Electricity: Census 2011 data showed that, on average, 78.4% of households in the project area use electricity for cooking, 70.4% for heating and 88.4% for lighting. As is currently the case with the new ward boundaries, Ward 15 was not on par with the other 2 wards: only 51.2% of its households used electricity for cooking (other energy sources included coal [23%], paraffin [9.4%] and wood [8.2%]) and 45% for heating (other heating sources included coal [26.1%] and wood [9.2%]). Also, only 70.2% of households in Ward 15 used electricity for lighting as opposed to 96.1% in Ward 5 and 99% in Ward 25.

Refuse removal: On average 77.6% of all households in the project area's refuse is removed at least once a week by the local authority. However, this is only true for half (50.6%) of households in Ward 15, compared to 90.3% in Ward 5 and 90% in Ward 25. Just over a third (37.1%) of households in Ward 15 still make use of their own refuse dumps for waste disposal. Untreated waste that is not properly stored can cause health impacts.



Road infrastructure and traffic: several secondary roads are heavily deteriorated, partially due to heavy motor vehicle (HMV) traffic. It is noteworthy that traffic is a prevailing problem in the area, traffic is especially heavy on access roads to and from the N 17. Traffic usually peaks during shift changes at Sasol's plants. Several measures have already been put in place to alleviate congestion in the area.

Land use and ownership

The most dominant land use within the mining right areas is agriculture, with several commercial maize farms located within the site-specific study area (defined as the extent of the farm portions on which the project footprint is located). Soya is also commonly cultivated. The land is to lesser extent used to graze livestock, particularly cattle.

The Trichardtsfontein Dam is situated towards the eastern border of the primary study area. The dam facilitates several land and water uses. Several business properties are also located within the mining right area (e.g. Secunda Nursery, Agata Eiendomme CC, Barka Eiendomme (Pty) Ltd and Gosler Prop (Pty) Ltd.). Another major land use includes the Terra Nova residential development, which is situated just north of Trichardt.

The majority of the site-specific study area is under private ownership.

Housing and planned developments

The GMLM IDP 2012-2015 estimates the housing backlog to be approximately 58 000 units. A number of low cost housing projects are under way, which will provide approximately 13 440 stands. Planned and existing housing developments include:

- Terra Nova Township;
- Trichardtsfontein Extension 8;
- TARU Township;
- Secunda Extension 8; and
- Proposed development on Portion 8 of Trichardtsfontein 140 IS.

The shortage of affordable housing is also evidenced by the growing number of informal settlements throughout and surrounding the primary study area (e.g. Holfontein). Nearly three-quarters of households in both municipalities live in formal dwellings. The remainder in the GSDM is split between traditional (10%) housing and informal dwellings (17%). The GMLM has a significantly larger proportion of informal dwellings (28%), which is likely an indicator of the influx of job-seekers and lower wage employees into the local municipality, where job opportunities are more prevalent than across the district.

Economic Overview

The overall employment rate of the economically active population in the project area is around 45.5%, with the lowest employment rate in Ward 15 (35.9%) and the highest in Ward 25 (52.6%). More than a third (38.2%) of households in Ward 15 lived in absolute poverty, which is defined as an annual household income of R 19 200 or less (or \leq R 1 600 per



month) for a family of 4, i.e. the family is unable to meet their basic food needs. A further quarter (24.5%) of the ward fell into the lower middle income bracket (\leq R 76 000 per annum). In comparison, most of the households in Wards 5 and 25 lived in the middle to high income brackets.

Mining is the dominant sector in the GSDM, the community services sector is the second largest (15.1%), followed closely by manufacturing (14.6%). Agriculture is the lowest contributor to the regional economy (4%). Mining and manufacturing are the foremost contributors to the GSDM economy and employs the largest number of people in the GMLM (22%) in 2011. Mining activities are mainly tied to coal, which serves as input material for the petrochemicals industry in GMLM, and electricity generation for the various power stations. GMLM's manufacturing sector is driven mainly by Sasol's petrochemical / synthetic fuels plants at Secunda.

Sasol contributes towards both the mining and manufacturing industries and is the largest contributor to these industries in the district.

Overall employment levels in the GMLM are only slightly higher than in the district. Throughout the secondary study area (defined as the GSDM and the GMLM) unemployment is high especially among rural households outside Trichardt. Areas such as Evander, Kinross, Embalenhle also experience high unemployment when compared to Secunda.

Attitudes, perceptions and concerns

Local communities have generally been welcoming the current operational TCTS project, whilst being supportive of the Trichardtsfontein project, as noted during engagements in 2014. They associated it with improved employment opportunities and other project related benefits. During the 2014 field investigations, it became clear that there existed considerable expectations for employment throughout communities, if these expectations have not been dealt with, it could result in negative feelings towards the project, which might ultimately culminate in civil resistance.

Several stakeholders are concerned that the mine will result in an additional increase in traffic and deterioration of roads.

Predicted Impacts and Recommended Mitigation Measures

The socio-economic impacts identified for the proposed consolidation of the Mining Right areas, their consequence, probability and significance ratings, as well as recommended mitigation measures are summarised in the table below. The table does not indicate the impacts previously described in the SIA report compiled for the Trichardtsfontein project, but rather the impacts (and change in impacts) associated with the proposed consolidation of the three mining areas. The 2014 SIA report, must however be read in conjunction with this addendum report.

Summary of impacts, impact ratings and recommended mitigation measures

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
Employ	Sustained employment	Project Life	Municipal Area	Moderately high - positive	Moderately beneficial	Probable	Minor - positive	Project Life	Municipal Area	Very high - positive	Highly beneficial	Likely	Moderate - positive
Confl	Conflict and competition	Medium term	Limited	High - negative	Moderately detrimental	Probable	Minor - negative	Medium term	Limited	Very low - negative	Slightly detrimental	Unlikely	Negligible - negative
Property	Financial implications for property developers	Beyond project life	Limited	Very high - negative	Highly detrimental	Likely	Minor - negative	Medium term	Limited	Moderately high - negative	Slightly detrimental	Probable	Minor - negative
Com-dev	Community development - LED and CSI	Long term	Local	Very low - positive	Slightly beneficial	Probable	Negligible - positive	Beyond project life	Local	High - positive	Highly beneficial	Highly probable	Moderate - positive
Subsi	Potential subsidence induced impacts	Long term	Limited	High - negative	Moderately detrimental	Improbable	Negligible - negative	Long term	Limited	High - negative	Moderately detrimental	Improbable	Negligible - negative



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ABBREVIATIONS & ACRONYMS

CSI	Corporate Social Investment
Digby Wells	Digby Wells Environmental
DoL	Department of Labour
DMR	Department of Mineral Resources
EA	Environmental Authorisation
EIA	Environmental Impact Assessment
EMP	Environmental Management Programme
GSDM	Gert Sibande District Municipality
GMLM	Govan Mbeki Local Municipality
HMV	Heavy Motor Vehicles
HAART	Highly Active Antiretroviral Therapy
HDSA	Historically Disadvantaged South Africans
HIV/AIDS	Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome
HRD	Human Resource Development
IDP	Integrated Development Plan
IFC	International Finance Corporation
LoM	Life of Mine
LED	Local Economic Development
LM	Local Municipality
MI	Megalitre
Mt/a	Million tonnes per annum
MPRDA	Mineral and Petroleum Resources Development Act
MRA	Mining Right Application
MWP	Mining Work Programme
NEMA	National Environmental Management Act
NCD	Non-communicable diseases
NGOs	Non-governmental Organisation
NSDP	National Spatial Development Plan
PR	Prospecting Right
PPP	Public participation process
RoM	Run of Mine

S&EIA	Scoping and Environmental Impact Assessment
STD	Sexually Transmitted Diseases
SMMEs	Small, Medium and Micro-sized Enterprises
SLP	Social and Labour Plan
SIA	Social Impact Assessment
SA	South Africa
SDF	Spatial Development Framework
SPLUMA	Spatial Planning and Land Use Management Act
ToR	Terms of reference
TB	Tuberculosis
TCTS	Twistdraai Colliery Thubelisha Shaft
TEP	Twistdraai Export Plant
VCT	Voluntary Counselling and Testing
WHO	World Health Organisation

1 Introduction

Sasol Mining (Pty) Ltd (Sasol) owns the Mining Right for the Twistdraai Colliery, Thubelisha Shaft (TCTS) (Ref: MP 30/5/1/2/2/138MR). In 2013, Duiker Mining (Pty) Ltd, a wholly owned subsidiary of Xstrata Coal, now Glencore Operations South Africa (Pty) Ltd (Glencore), appointed Digby Wells to undertake a Scoping and Environmental Impact Assessment (S&EIA) process. The S&EIA process was in support of a Mining Right Application (MRA) for the proposed Trichardtsfontein Mine in accordance with Section 39(1) and Regulation 49 of the MPRDA. Glencore's strategic objective was to cede the Trichardtsfontein Mining Right to Sasol once granted. The Trichardtsfontein Mine is intended as a link between two other Sasol operations.

In support of the S&EIA process, Digby Wells' social specialists undertook a Social Impact Assessment (SIA) in 2014. The S&EIA process concluded with the awarding of the Trichardtsfontein Mine Mining Right (Ref: MP30/5/1/2/2/10056MR). Complying with Section 11 of the MPRDA, Glencore has subsequently successfully transferred the approved Mining Right for Trichardtsfontein to Sasol. Sasol is now accountable for implementation of the approved Environmental Management Programme (EMPr) for the Trichardtsfontein Mining Right. Furthermore, Sasol is also the holder the Vaalkop Mining Right (Ref MP30/5/1/2/2/138MR). While this Mining Right has been awarded, no specialist studies or EMPr was compiled as part of the application process. The Vaalkop Mining Area is situated directly adjacent and north of the TCTS area. In response to the location of this Mining Right, it was amended for inclusion into the TCTS right and is currently waiting on registration with the relevant competent authorities.

Sasol is presently exploring options for the amendment to, and consolidation of, their three aforementioned Mining Rights. Sasol will accomplish this objective through the development of a consolidated EMPr for all three operations to promote more efficient and effective management. To this effect, they have proposed the following:

- To include high-extraction mining methodologies in addition to the approved bord and pillar mining method;
- To convey all waste rock and Run of Mine (RoM) from mine workings to the TCTS;
- To construct two ventilation shafts within their TCTS and Trichardtsfontein Mining Right areas respectively;
- To undertake the necessary specialist studies on the Vaalkop Mining Right area to assess the potential impacts of mining activities; and
- To consolidate their TCTS and Trichardtsfontein EMPr and include the results of the Vaalkop specialist studies into a single EMPr as part of the greater "Secunda Complex".

These proposed activities do not exceed thresholds contained within the National Environmental Management Act, 1998 (Act No. 107 of 1998) (NEMA) Environmental Impact Assessment (EIA) Regulations (GN R 982), promulgated in 2014. This does not, however, preclude the requirement to obtain Environmental Authorisation (EA) for these

infrastructures. Furthermore, consolidating the various Mining Rights will require adjudication by the Department of Mineral Resources (DMR) in terms of Section 102 of the MPRDA.

This report serves as an update to the current Social Impact Assessment (SIA) Report (Digby Wells, 2014) completed for the Trichardtsfontein Mining Right. This updated SIA comprises an updated social baseline profile and revised impact assessment based on the inclusion of the Vaalkop Mining Right Area, thus presenting a consolidated specialist study.

1.1 Terms of Reference for the Study

The Terms of Reference (ToR) for this particular assignment was to update the socio-economic baseline profile of the original SIA (Digby Wells, 2014) to better reflect the current socio-economic condition of the district and local municipality, and the affected wards in particular.

Secondary objectives in support of this were as follows:

- Review the SIA report that was compiled in 2014 to ensure a full understanding of the project, identify areas that are in need of updating, and revise the structure of the report where applicable;
- Update the baseline social data to include all affected wards for the consolidation of the EMPs of the various Mining Rights; and
- Re-assess the impact assessment to ensure applicability with the proposed consolidated Mining Right areas.

This addendum report must be read in conjunction with the SIA compiled for the Trichardtsfontein project in order to gain a full understanding of the impacts identified therein. The impacts assessed in this addendum report include a review of the previously identified impacts, whilst taking into consideration any changes brought about by the proposed consolidation of the TCTS, Trichardtsfontein and Vaalkop Mining Right areas.

1.2 Structure of the Addendum Report

The remainder of this report is structured as follows:

- Details of the project are presented in **Section 2**.
- **Section 3** details the methodology employed for this addendum report and includes details on the study areas, the various data collection activities, information on the completion of the baseline profile, the review of old impacts, and the identification and rating of new impacts, including the design of mitigation and enhancement measures.
- **Section 4** provides an updated baseline description of the study areas, and includes the socio-economic context of both the secondary study area (the Gert Sibande District (GSDM) and Govan Mbeki Local Municipalities (GMLM)); and primary study areas (Wards 5, 15 and 25 of the GMLM).



- **Section 5** is dedicated to the identification, assessment and rating of new potential social impacts that may arise as a result of the consolidation of the TCTS, Trichardtsfontein and Vaalkop Mining Right areas, with the inclusion of high-extraction mining methodologies, and establishment of two new ventilation shafts. This includes recommended mitigation measures for negative impacts and enhancement measures for positive impacts.
- **Section 6** lists and discusses several risks that might negatively influence the progress and feasibility of the project; and
- Finally, **Section 7** presents the main conclusions of the SIA and contains recommendations relevant to the consolidation of the TCTS, Trichardtsfontein and Vaalkop Mining Right areas.

1.3 Legal Framework

The following national legislation is relevant to an SIA for a mining project:

- The **South African Constitution, 1996**. The proposed Project has to comply with South African constitutional and common law by conducting its construction, operational and closure activities with due diligence and care for the rights of others. Section 24 (a) of the South African Constitution states that everyone has the right to an environment that is not harmful to their health and well-being. This provision supersedes all other legislation.
- The **National Environmental Management Act, 1998** (Act 107 of 1998) (NEMA). The NEMA, as amended, was set in place in accordance with section 24 of the Constitution of the Republic of South Africa. It provides the legal framework for implementing the state's constitutional obligations with regard to environmental management. NEMA sets forth a number of principles for guiding decision-making on proposed activities that could affect the social, economic and biophysical environment. The following principles are relevant to a socio-economic impact assessment:
 - Decisions regarding a proposed activity should not only be based on their environmental impact and economic feasibility, but should also take into account their social sustainability;
 - Decisions must take into account the interests, needs and values of all interested and affected parties (I&APs), and must recognise all forms of knowledge, including traditional and ordinary knowledge;
 - The social, economic and environmental impacts of activities, including disadvantages and benefits, must be considered, assessed and evaluated and decisions must be appropriate in the light of such considerations and assessment; and
 - Decisions must be taken in an open and transparent manner and access to information must be provided in accordance with the law.



- The ***Occupational Health and Safety Act, 1993*** (Act No. 85 of 1993): The objective of this Act is to provide for the health and safety of persons at work. In addition, the Act requires that, as far as reasonably practicable, the employers must ensure that their activities do not expose *non-employees* to health hazards.
- The ***Mineral and Petroleum Resources Development Act, 2002*** (Act No. 28 of 2002) (MPRDA), which requires that mining companies assess the social impacts of their activities from start to closure, and beyond, and which also requires that mining companies compile and implement a Social and Labour Plan (SLP) to promote socio-economic development in their affected communities and to prevent or lessen negative social impacts.
- The ***Extension of Security of Tenure Act, 1997*** (Act No. 62 of 1997), which confers certain rights to non-landowning residents of a property, these rights are linked to the period of time in which persons have been resident on the land.
- The ***Development Facilitation Act, 1995*** (Act No. 67 of 1995), which sets out the principle that policy, administrative practice and laws should support effective integrated planning, the optimal use of existing resources, the promotion of sustainable development, and the requirement that land use should be judged on its merits.
- ***Municipal Systems Act, 2000*** (Act No. 32 of 2000), amongst other things, provides for the core principles, mechanisms and processes that are necessary to enable municipalities to move progressively towards the social and economic upliftment of local communities, and ensure universal access to essential services that are affordable to all.
- ***National Spatial Development Plan (NSDP)***, in South Africa spatial development is guided by the NSDP. The GSDM and GMLM spatial development frameworks are nested within the NSDP's principles. The Plan proposes that several principles should be used as a guide by government when making decisions on infrastructure investment and development spending. In short these principles state that spatial development should, where appropriate, accommodate and promote private economic ventures, which can aid sustainable economic growth, relieve poverty, increase social investment, and improve service delivery.
- ***Municipal Structures Act, 1998*** (Act No. 117 of 1998). This Act states that district and local municipalities should support and co-operate with one another. The division of functions between local and district municipalities may be adjusted according to the Act. This allows local municipalities to take on more responsibilities from district municipalities, such as service provision.
- ***Spatial Planning and Land Use Management Act, 2013*** (Act No.16 of 2013). The Spatial Planning and Land Use Management Act (SPLUMA) aims to reform and guide legislation pertaining to spatial planning and land use management. It enables government to formulate policies, plans and strategies for land use and land development that addresses existing spatial, economic and environmental



challenges. The Act emphasises inclusive, developmental, equitable and efficient spatial planning at different spheres of government. All municipalities are required to develop land use and zoning plans within five years from when the Act was promulgated, in other words in 2018. The Act recognises the constitutional imperative and the State's duty to realise the right to services and emphasises that land development requires integration of social, economic and environmental considerations. Section 3 of the Act provides that spatial planning and land use management should promote social and economic inclusion and that imbalances of the past be addressed. Section 6 of the Act provides for the application of core development principles which binds municipalities in matters of spatial planning and land use. Section 12 requires a municipality to develop a framework that includes previously disadvantaged areas, informal settlements and slums, and that addresses their inclusion and integration in spatial, economic, social and environmental objectives of a relevant sphere.

National policies or legislation in southern Africa do not explicitly address involuntary resettlement. This policy vacuum is inadequately filled by complicated land tenure, environmental and planning legislation. Consequently, the existing legal frameworks for addressing involuntary resettlement are inadequate and do not aid communities, implementing agents or mining companies. Instead they often obscure rights and responsibilities, cause unnecessary delays to resettlement projects and increase the total costs involved (Sonnenberg & Münster, 2001). In view of this gap in national legislation, resettlement processes in South Africa often tend to follow the guiding principles set out in *Performance Standard 5: Land Acquisition and Involuntary Resettlement*, of the International Finance Corporation (IFC) Performance Standards, 2012, which sets out the following objectives:

- Avoid, and when avoidance is not possible, minimise displacement by exploring alternative project designs;
- Avoid forced eviction;
- Anticipate and avoid, or where avoidance is not possible, minimise adverse social and economic impacts from land acquisition and/or restrictions on land use by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that all resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected;
- Improve, or restore, the livelihoods and standards of living of displaced persons;
- Improve living conditions among physically displaced persons through the provision of adequate housing with security of tenure at resettlement sites, and
- Provide opportunities to displaced people to derive appropriate development benefits from the project.

2 Project Description

This section provides a summary of the Project, its associated activities, including the proposed activities associated with the consolidation.

A fully detailed project description is provided in the main EIA report.

2.1 Overview of the Project

The consolidation project area owned by Sasol Mining Twistdraai Thubelisha Colliery comprises three mining right areas namely TCTS, Trichardtsfontein and Vaalkop. Twistdraai Thubelisha Colliery is currently mining TCTS and proposes to start mining Trichardtsfontein within the next few months. Vaalkop mining area although a priority to Twistdraai Thubelisha Colliery will only start mining in 2029. To ensure the mines operate in a more efficient and effective manner Twistdraai Thubelisha Colliery intends to compile (Vaalkop) and consolidate all amended EMPs into one merged EMP.

The Trichardtsfontein project area is 3 170 ha in size, but only an area of approximately 1 382 ha will be undermined. The coal seam depth at Trichardtsfontein is estimated to be at an approximate depth of 140 – 160 m below surface. The infrastructure (including access shafts) will be on the adjacent mining property of Sasol Mining at the TCTS. However, two ventilation shafts (up and downcast) have been proposed to be construction on TCTS and two ventilation shafts (up and downcast) have been proposed to be construction on Trichardtsfontein which will assist in providing sufficient ventilation to the underground mining area.

The Vaalkop project area is approximately 8 600 ha in extent. The initial mining activities in this area will be conducted as green field operations as no existing infrastructure for coal mining exists in the area. It is foreseen that the Thubelisha conveyor could possibly be utilised. All mining activities will be conducted by means of underground mining operations, such as the bord-and-pillar and high extraction mining method. No infrastructure will be constructed on the Vaalkop project area as all required infrastructure will be located at the TCTS site. It is estimated that the coal seam depth at Vaalkop is approximately 80 - 120 m below surface.

The TCTS project area is 7 200 ha in size. The coal seam depth at TCTS is estimated to be at a depth of 140 - 170 m below the surface and the seam is approximately 2 – 5 m thick.

In all mining right areas will only mine the No 4 seam as it is the only seam of coal that is economically viable.

Due to the variation in depth of mining and coal seam an assumption has been made that mining will be undertaken between 30 m and 215 m. Therefore all impact assessments and specialist studies have assessed the impacts of mining utilising bord and pillar with high extraction at this depth.

2.2 Project Location

The project area is situated within the GMLM of the GSDM in Mpumalanga Province. This region is characterised by mining, cultivation and grazing activities. In addition to the TCTS, Trichardtsfontein and Vaalkop Mining Right areas, the Isibonela and Syferfontein mining operations are situated to the northwest of the project area.

The location of the project area in relation to major settlements in the region is presented in Table 1.

Table 1: Distance and direction to major settlements

Town	TSTS and Trichardtsfontein Distance (km)	Direction	Vaalkop Distance (km)	Direction
Secunda	11	Southwest	20	Southwest
Trichardt	0	South	17	Southwest
Bethal	33	East	5	Southeast
Evander	17	West	25	Southwest

There are a number of human settlements within and adjacent to the Project area. Farmsteads and farm worker houses are scattered over the Project area. A township development known as Terra Nova has been established within the Trichardtsfontein MRA. The development involves two phases; Phase 1 which has been zoned as mixed residential and has been completed while Phase 2 which will comprise a “lifestyle estate” with equestrian facilities and other open space components land which will be completed within the next few years.

2.3 Mining Method

Due to the depth of the resource (i.e 30 - 215 m), underground mining will be used to access the ore body. A high extraction method of mining using bord-and-pillar mining with pillar extraction is currently being used at the TCTS and is proposed to be utilised at the Trichardtsfontein and Vaalkop operations. In mechanised bord and pillar mining, extraction is achieved by developing a series of roadways (bords) in the coal seam connected by splits (cut-throughs) to form pillars. In high extraction mining, all the pillars are extracted to allow the roof to collapse in a controlled manner (Stooping). Initially mining will occur to the east and west and move towards the north and south. Stooping will occur outside of the 1:100 floodlines and developed areas.

Access to the reserves will be achieved via a vertical man and materials shaft and an incline coal shaft located at TCTS. Therefore, no surface infrastructure is proposed to be constructed at the Trichardtsfontein or Vaalkop. Coal exits the mine by conveyor via an incline shaft located on the farm Frischgewaagd 142 IS. The RoM reserve for the TCTS is estimated at 132 million tons. The production rate for the TCTS is estimated at 10.6 million

tons of coal per annum. TCTS Life of Mine (LoM) is about 20 years therefore will reach LoM by 2029.

Coal mined from the Trichardtsfontein Mine will be fed through a feeder breaker and then transported by a conveyor belt system to the surface at the TCTS, for beneficiation or for sale as raw coal. Four sections will be mined at different times, at a production rate of approximately 40 000 tonnes per section/month. Although total annual production from the mine will vary, it will be approximately 1.9 Million tonnes per annum (Mt/a), with a LoM of about 17 years. A ventilation shaft will be constructed for ventilation purposes in the underground workings which will be located at the TCTS operation.

2.4 Employment and Expenditure

No new jobs will be created as part of the current amendment process. It is envisaged that existing TCTS employees will be utilised to complete operational activities as both Trichardtsfontein and Vaalkop respectively.

2.4.1 Workforce forecasts

AS mentioned above, TCTS is currently in operation and therefore a summary of the TCTS operational phase personnel is given in Table 2.

Table 2: Summary of TCTS operational phase employees

Category	Numbers
Skilled	244
Semiskilled/Unskilled	823
Administrative & Management	154
TOTAL	1221

The costs associated with the execution of the approved Trichardtsfontein SLP are provided in Table 3 below. Over a five year period (year 1 being 2015), nearly R13.4 million will be spent on Human Resources Development (HRD), R11.8 million on LED and just over R5.1 million on the management of downscaling and retrenchment. A total of R30.3 million has been assigned to the execution of the SLP for the first five years of the proposed project.

Table 3: Estimated expenditure on the SLP

SLP commitment	Year 1	Year 2	Year 3	Year 4	Year 5
Human Resources Development Programmes	1.49	1.49	2.64	3.87	3.87
Local Economic Development	2	7	2.3	0.5	-
Closure and Retrenchment Management Programmes	0.57	0.57	1.02	1.49	1.49
Total	4.06	9.06	5.96	5.86	5.36

2.4.2 Expenditure forecasts

The consolidation of the aforementioned Mining Rights will have no capital expenditure costs, as mining will continue from TCTS, utilising existing infrastructure and equipment.

According to the Mining Works Programme (MWP) for Trichardtsfontein, the operational costs for the first ten years will vary between R11.8 million during the first year, to almost R 332 million in Year 10. A significant proportion of the operational expenditure will benefit Historically Disadvantaged South Africans (HDSAs), mostly within either the GMLM or GSDM (unless the goods and services are not available within these areas).

3 Study Scope and Methodology

This section provides an summary of the approach taken in the development of the SIA in 214, with a description of the additional steps undertaken in compiling this addendum report.

3.1 Objectives

As above, the objectives of the SIA are as follows:

- Gain an understanding of the baseline socio-economic conditions in the Project area;
- Identify the potential socio-economic impacts that could result from the Project; and
- Design appropriate mitigation measures to reduce and, if possible, avoid negative impacts, as well as to enhance positive impacts.

3.2 Study Tasks

Based on the definition of the study areas presented in the 2014 SIA, changes include the provision of a site-specific study area.

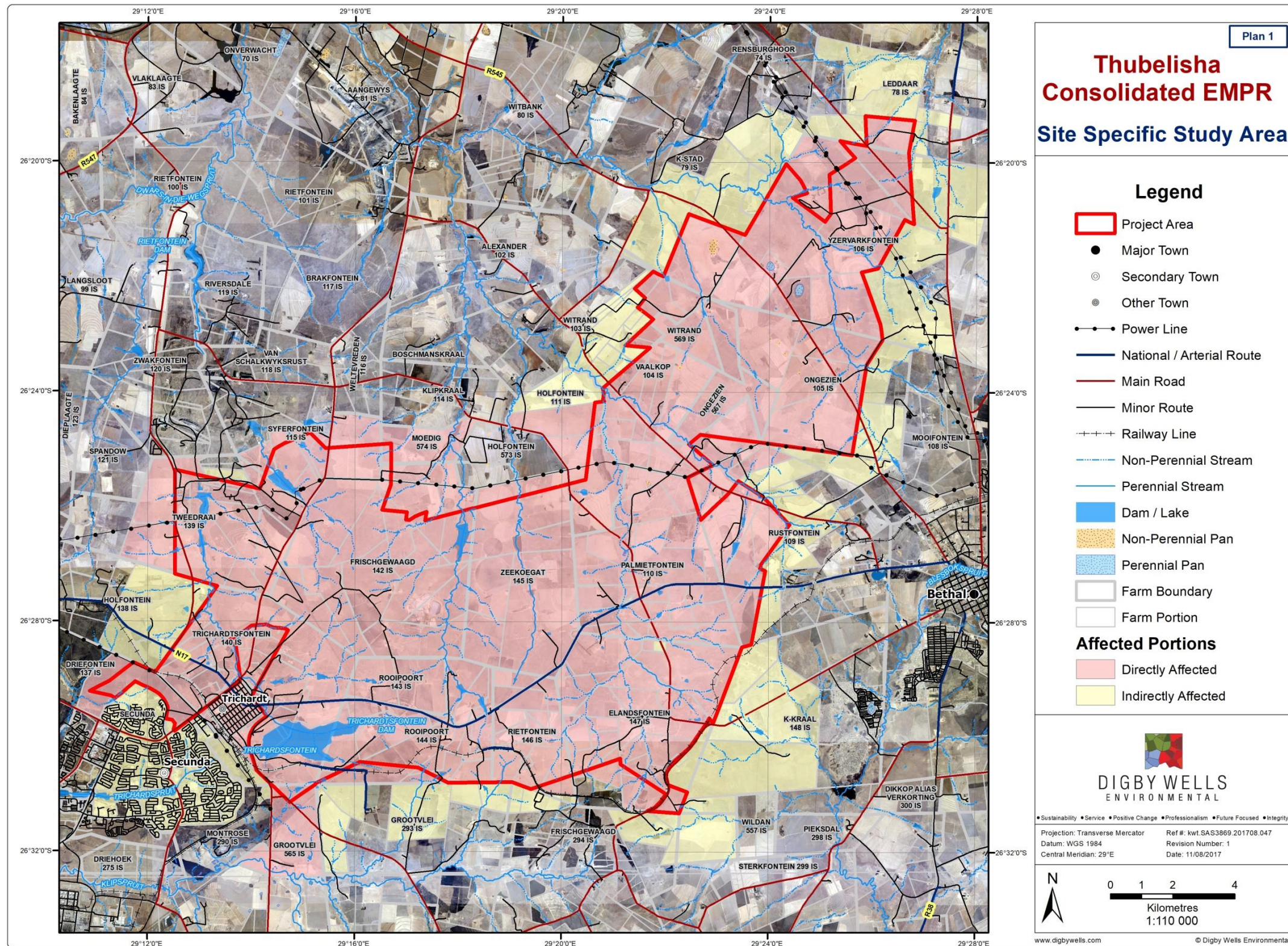
The study method is discussed in more detail below:

3.2.1 Definition of the Study Areas

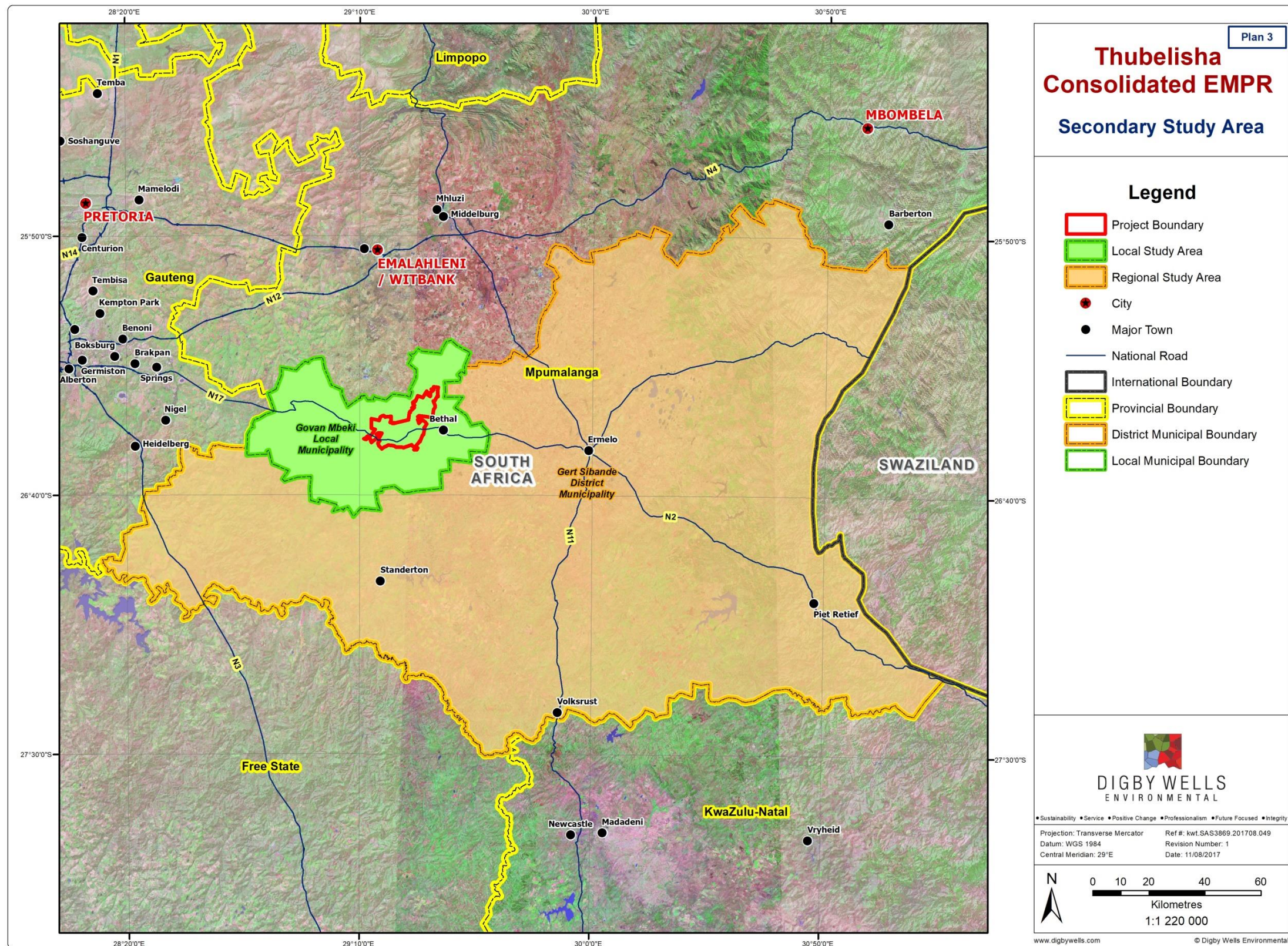
For the purposes of the SIA, three concentric study areas have been defined, as follows:



- A **site-specific study area**, defined as the extent of the farm portions on which the project footprint is located (shown in Plan 1), as well as its immediate surroundings. This area is likely to experience impacts related to the **physical intrusion** of project infrastructure and **project-related activities** on the surrounding environment (which may include socio-economic impacts arising from land acquisition, noise, dust, vibration and changes in the visual characteristics of the landscape).
- A **primary study area**, defined as the local municipality in which the proposed project is located, namely the GMLM; but more specifically, the associated wards within which the project footprint is located. In this instance it includes Wards 5, 15 and 25 of GMLM (Plan 2). This area is likely to experience impacts related to the **“economic pull”** exerted by the project (including job creation, an influx of workers and job-seekers into the project area, as well as the concomitant risk of increased social pathologies and community conflict), as well as **indirect or induced impacts** that are ripple-effects of other impacts experienced on a smaller scale. These indirect impacts could include increased pressure on local services and resources (as a result of population influx), multiplier effects in the local and regional economy (as a result of the creation of new jobs and project-related expenditure), macro-economic benefits of the project and benefits derived from corporate social investments by the project proponent.
- A **secondary study area**, defined as the extent of the indirectly affected area, i.e. the Mpumalanga Province, and within that, the GSDM and the GMLM (Plan 3). As per definition of the primary study area, the secondary study area will experience indirect and/or induced impacts, but to a lesser extent (i.e. the experience of impacts is likely to be diluted to some extent).



Plan 1: Site-specific Study Area



Plan 3: Secondary Study Area

3.2.2 Data Collection

The information presented in this document was obtained through the following data collection activities.

3.2.2.1 Data collection – 2014

The following activities were undertaken during the completion of the 2014 SIA

- A **desktop review** of available documents to obtain relevant baseline socio-economic information on the different study areas. Documents reviewed included the following:
 - Census 2011 data;
 - Integrated Development Plans (IDPs), Local Economic Development Plans (LEDs) and Spatial Development Frameworks (SDFs) of the local and district municipalities;
 - Previous studies and reports concerning the proposed project, specifically the EIA/EMP report compiled by Digby Wells and submitted to the DMR in July 2013, the Mining Works Programme (MWP) dated November 2012, and the SLP dated October 2012; and
 - Available maps and satellite imagery.
- **Investigative site visit** undertaken during January 2014, which allowed the specialist to become familiar with the study area and gain an understanding of the prevalent social issues and concerns.
- **Interviews with key informants (listed in the 2014 SIA report)**. The main purpose of these consultations was to:
 - Assess stakeholders' perceptions, concerns and expectations regarding the proposed project;
 - Verify baseline socio-economic information collected through the desktop review;
 - Identify potential impacts of the proposed project on people's lives and livelihoods; and
 - Assist with the identification of mitigation measures to avoid or reduce negative impacts of the project, and enhance the positive ones.
- **Information from other specialist studies**. Many of the specialist studies undertaken for the project, focus on impacts that also have significant, although indirect, social implications. For example, the noise impact assessment focuses more on the level of noise that will be generated as a result of mining operations and how this will change the ambient noise levels in the area, as opposed to investigating the effect this noise will have on the quality of life for the surrounding land owners and communities. Similarly, the geohydrological impact assessment addresses, inter alia,

changes in the quantity and quality of ground water as result from the proposed project and not the implications this will have on the health and well-being of people in the vicinity of the project area. The SIA thus included a review of the findings of these specialist studies to assess the social impacts that derive from the impacts investigated by the studies.

- **Information from the public participation process (PPP)**, including the Background Information Document, minutes of meetings and the Comments and Response report. Reviewing this information provided the social specialist with additional information regarding the concerns, attitudes and perceptions relating to the proposed project.

3.2.2.2 Data Collection – 2017 Addendum report

In support of the extensive data collection activities above, it was necessary to ensure an updated baseline environment of the proposed consolidated Mining Right areas. The following additional data collection was undertaken:

- A **desktop review** of available documents to obtain accurate baseline socio-economic information on the different study areas. Additional secondary data sources reviewed include the following:
 - Census 2011 data, including updated ward-level data;
 - Wazimap, a joint project by Media Monitoring Africa and OpenUp that provides reformatted Census 2011 data to reflect the latest municipal and ward boundaries from the 2016 Municipal Elections;
 - Community Survey 2016 data, where available (very limited data is available in CS2016 and then also only on provincial, district and municipal level);
 - Updated IDPs, LEDs and SDFs of the local and district municipalities;
 - Available maps, and satellite imagery in Google Earth (2012-2016); and
 - Mpumalanga Provincial Treasury's Socio-Economic Review and Outlook (2015).

3.2.3 Compilation of the updated Socio-Economic Baseline Profile

On the basis of the information collected in the 2014 SIA and through the additional data collection, an updated socio-economic baseline profile was compiled for the site-specific, primary and secondary study areas, as defined in Section 3.2.1. Topics considered as part of this profile include the following:

- Population demographics
- Education
- Household services;
- Health;
- Land use and tenure;

- Economy;
- Poverty and vulnerability;
- Housing and informal settlement; and
- Attitudes and perceptions.

3.2.4 Identification of Impacts

A range of issues and potential social impacts were identified in the undertaking of the 2014 SIA. These were identified, based on information obtained through the PPP, consultation that took place for the purposes of the SIA and specialist opinion. These impacts were categorised according to the project phase (construction, operation and decommissioning) in which each is likely to occur. A summary of these impacts is presented in Section 5 of this addendum report. Similarly, where the nature, and overall significance of previously identified impacts are deemed to have changed through the proposed consolidation process, or where new impacts identified, these are described in Section 5 below.

3.2.5 Rating of Impacts

The impact rating process is designed to provide a numerical rating of the various social impacts identified. The significance rating process follows the established impact / risk assessment formula, as shown below:

$$\textit{Significance} = \textit{consequence of an event} \times \textit{probability of the event occurring}$$

where

$$\textit{Consequence} = \textit{Type of impact} \times (\textit{Intensity} + \textit{Spatial Scale} + \textit{Duration})$$

and

$$\textit{Probability} = \textit{Likelihood of an impact occurring}$$

In the formula for calculating **consequence**:

$$\textit{Type of impact} = +1 \text{ (for positive impacts) or } -1 \text{ (for negative impacts)}$$

The weight assigned to the various parameters for positive and negative impacts in the formula is presented in Table 4 to Table 7 below.



Table 4: Rating options: intensity

Rating	Negative impacts (Type of impact = -1)	Positive impacts (Type of impact = +1)
7	Irreparable damage to highly valued items of great cultural significance or complete breakdown of social order	Noticeable, on-going social benefits which have improved the livelihoods and living standards of the local community in general
6	Irreparable damage to highly valued items of cultural significance or breakdown of social order	Great improvement to livelihoods and living standards of a large percentage of population
5	Very serious widespread social impacts. Irreparable damage to highly valued items	On-going and widespread positive benefits to local communities which improves livelihoods
4	On-going serious social issues. Significant damage to structures / items of cultural significance	Average to intense social benefits to some people
3	On-going social issues. Damage to items of cultural significance	Average, on-going positive benefits, not widespread but felt by some
2	Minor medium-term social impacts on local population. Mostly repairable. Cultural functions and processes not affected	Low positive impacts experience by very few of population
1	Minimal social impacts, low-level repairable damage to commonplace structures	Some low-level social benefits felt by very few of the population

Table 5: Rating options: spatial scale

Rating	Definition
7	International: The effect will occur across international borders
6	National: Will affect the entire country
5	County: Will affect the entire region
4	District: Will affect the whole administrative area
3	Local: Extending across the site and to nearby settlements
2	Limited: Limited to the site and its immediate surroundings
1	Very limited: Limited to specific isolated parts of the site

Table 6: Rating options: duration

Rating	Definition
7	Permanent: The impact will remain long after the life of the project
6	Beyond project life: The impact will remain for some time after the life of the project
5	Project Life: The impact will cease after the operational life span of the project
4	Long term: 6-15 years
3	Medium term: 1-5 years
2	Short term: Less than 1 year
1	Immediate: Less than 1 month

Table 7: Rating options: probability

Rating	Definition
7	Certain / Definite: There are sound scientific reasons to expect that the impact will definitely occur
6	Almost certain / Highly probable: It is most likely that the impact will occur
5	Likely: The impact may occur
4	Probable: Has occurred here or elsewhere and could therefore occur
3	Unlikely: Has not happened yet but could happen once in the lifetime of the project, therefore there is a possibility that the impact will occur
2	Rare / improbable: Conceivable, but only in extreme circumstances and/ or has not happened during lifetime of the project but has happened elsewhere. The possibility of the impact materialising is very low as a result of design, historic experience or implementation of adequate mitigation measures
1	Highly unlikely / None: Expected never to happen.

Impacts are rated prior to mitigation or enhancement and again after consideration of the proposed mitigation or enhancement measures. The impact is then determined and categorised into one of eight categories, as indicated in the table below.

Table 8: Significance ratings

Score	Description	Rating
109 to 147	A very beneficial impact which may be sufficient by itself to justify implementation of the project. The impact may result in permanent positive change	Major (positive)
73 to 108	A beneficial impact which may help to justify the implementation of the project. These impacts would be considered by society as constituting a major and usually a long-term positive change to the (natural and / or social) environment	Moderate (positive)
36 to 72	An important positive impact. The impact is insufficient by itself to justify the implementation of the project. These impacts will usually result in positive medium to long-term effect on the social and/or natural environment	Minor (positive)
3 to 35	A small positive impact. The impact will result in medium to short term effects on the social and / or natural environment	Negligible (positive)
-3 to -35	An acceptable negative impact for which mitigation is desirable but not essential. The impact by itself is insufficient even in combination with other low impacts to prevent the development being approved. These impacts will result in negative medium to short term effects on the social and / or natural environment	Negligible (negative)
-36 to -72	An important negative impact which requires mitigation. The impact is insufficient by itself to prevent the implementation of the project but which in conjunction with other impacts may prevent its implementation. These impacts will usually result in negative medium to long-term effect on the social and / or natural environment	Minor (negative)

3.2.7 Assessment of Cumulative Impacts

Cumulative impacts are defined as impacts arising from the combined effects of two or more projects or actions. The importance of identifying and assessing cumulative impacts stems from the fact that, in social as well as natural systems, the whole is often more than the sum of its parts – implying that the total effect of multiple stressors or change processes acting simultaneously on a system may be greater than the sum of their effects when acting in isolation (e.g. doubling the population influx into an area, for instance, might not just double the pressure on local infrastructure and services – it might cause them to collapse completely). Cumulative impacts to which the proposed project might contribute to are briefly discussed in Section 5.4.

3.3 Limitations and Assumptions of Study

Although all reasonable efforts were made to provide an updated and representative picture of socio-economic baseline profile relevant to the study areas, this addendum report is still subject to some assumptions and limitations:

- This report is based on available information obtained from the client, the internet, and other specialists. The 2017 addendum study was conducted within available timeframes and budget. The sources consulted are in no way exhaustive, although deemed sufficient to meet the ToR for the current study objectives. No information has been deliberately excluded from this report, and it is assumed that no party withheld relevant information from the specialists.
- The updated baseline data applicable to the primary and secondary study areas is solely based on a desktop study of all readily available information.
- At the time of the social engagements (2014), several participants admitted that they are reluctant to participate in the study due to the fact that they are currently involved with legal procedures against the applicant for the mining right at the time. It is unknown at what stage these actions have progressed.
- The following assumptions were made:
 - The 2014 SIA was compiled with the assumption that mining would be by the conventional bord-and-pillar method. Based on the proposed consolidation process, the mining methods will include high-extraction mining, thereby increasing the likelihood of surface-related impacts, such as subsidence. It should be noted, however, that appropriate geotechnical design will be required to mitigate against such risks.
 - Mining activities will not affect any existing surface land use, and will therefore not result in any economic or physical displacement of those residing on the undermined area;
 - The underground mine and existing and/or planned residential development can and will co-exist, however, the risks associated with subsidence will need to be considered and communicated to the relevant municipal officers.

4 Updated Socio-economic Baseline Profile

The socio-economic baseline profile of the receiving social environment is presented in this section. The inclusion of this information is motivated by the fact that an understanding of the social environment is required to anticipate and understand the potential social impacts that may result from the proposed project.

The baseline profile focuses on the socio-economic characteristics of the site-specific, primary and secondary study areas defined in Section 3.2.1. The information presented is largely based on the results of the 2011 Census, supplemented by relevant information from other data sources such as the IDP for the GSDM (Socio-economic) and GMLM (2017-2022), as well as the GMLM's SDF. Both the qualitative data obtained through consultation with local stakeholders by means of interviews, and the data obtained during the investigative site visit have also been incorporated into this section in order to present a consolidated profile of each of the Mining Right areas.

4.1 Updated Profile of the Secondary Study Area

This section provides an updated version of the socio-economic baseline profile of the secondary, or indirectly affected study area, i.e. the Mpumalanga Province, the GSDM and the GMLM.

4.1.1 Mpumalanga Province

4.1.1.1 Population Demographics

The Mpumalanga Province covers an area of 76 544 km², which represents approximately 6.2% of South Africa's total land surface. In 2011 it was home to an estimated 4 040 000 million people, which is roughly 7.8% of South Africa's total population. The population grew at an estimated 1.46% per annum to approximately 4 336 000 people in 2016 (Community Survey, 2016). Of the 2016 population, slightly more than half (50.6%) were female and just more than a third (38.4%) were between the ages of 15 and 34 (i.e. 'youth'). This is more or less in line with the 2011 profile when 51% of the province was female and 38.2% were considered youth. Community Survey 2016 (provinces at a glance) did not include racial data but the predominant population group by far in 2011 was Black African (91%) followed by White (8%), so it can be expected that the racial profile changed little between 2011 and 2016. SiSwati is the language most spoken at home (27%), closely followed by IsiZulu (24%) (Census 2011).

4.1.1.2 Education

Close on two thirds (62.8%) of the province's population completed Grade 9 or higher. Just over a third (37.5%) obtained matric and went on to study further (2011, no data for 2016).

4.1.1.3 Household Services

In 2011 the province consisted of approximately 1 075 500 households (3.8 persons per household), which increased to 1 239 000 households in 2016 (3.5 persons per household).

Formal housing increased by approximately 147 000 houses between 2011 and 2016 but at the same time, informal housing also increased, although at a much slower rate of approximately 18 000 hovels¹ over the 5-year period. The majority of households (88.1%) have access to piped water. In contrast, less than half (49%) have access to a flush/chemical toilet facility, which is slightly higher than 2011's 45.2%. A total of 90.6% of households were connected to electricity in 2016.

4.1.1.4 Health and Safety

The 2016 overall estimated HIV prevalence rate for South Africa is approximately 12.7% (up 1.5% from 2015). This means that the total number of people living with HIV increased by just under a million in a years' time: from approximately 6.19 million in 2015 to an estimated 7.03 million in 2016. An estimated 18.9% of the adult population aged 15-49 is HIV positive (StatsSA, 2016). In 2012, Mpumalanga had the second highest HIV prevalence rate of all provinces, at an estimated 14.1% of the total population (HSRC, 2012)². The latest available data on the TB incidence rate for the province (2013/14) shows that the infection rate is around 471 per 100 000, which is lower than the national incidence of 689 per 100 000. The TB mortality rate for the same period was 5.6% and still higher than the provincial target of <5%.

The crime profile Mpumalanga was obtained from the South African Police Services (SAPS) website. The SAPS group crime statistics into 6 main crime categories, these being:

- Contact crimes (crimes against the person), including murder, attempted murder, sexual offences, assault with the intent to inflict grievous bodily harm, common assault, common robbery, and robbery with aggravating circumstances;
- Contact-related crimes, including arson, and malicious damage to property;
- Property-related crimes, including burglaries at residential and non-residential properties, theft of vehicles, theft from vehicles, and stock theft;
- Crime detected as a result of police action, including illegal possession of firearms, drug-related crimes, driving under the influence, and certain sexual offences;
- Other serious crimes, including all types of theft not previously mentioned, commercial crime, and shoplifting; and
- Subcategories of aggravated robbery, which includes all forms of hijacking, and armed robberies at residential and non-residential premises.

An overview of the crime rate of the area between 2011 and 2016 is provided in Figure 2 below, which shows a general decrease in most crime categories, except for property-related crimes and crimes against the person where the crimes rates seem to be fluctuating.

¹ Definition: a small squalid or simply constructed dwelling

² The 2012 figures are the latest available. According to the *Socio-Economic Review and Outlook of Mpumalanga (published by the Mpumalanga Treasury, 2015)*, the Department of Health placed an embargo on post 2013 HIV prevalence figures for the province.

It seems that the crime rate, in general, fluctuates between years but peaked during 2015/16, especially in the contact and contact-related crime categories.

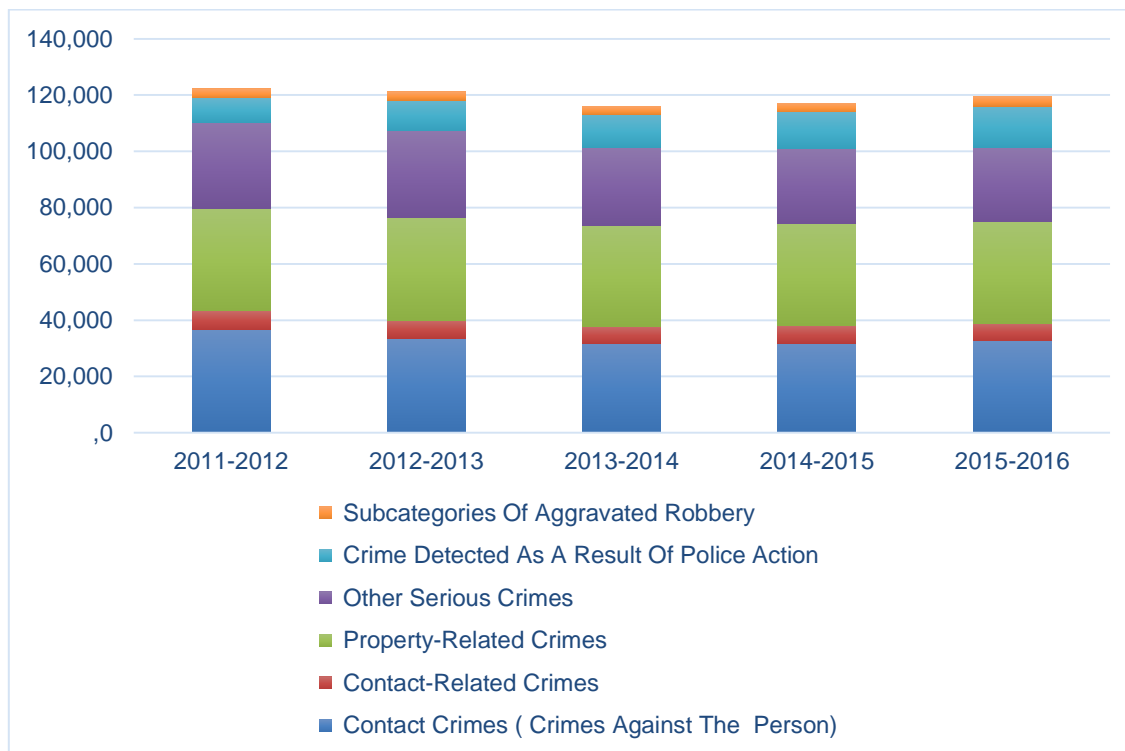


Figure 2: Overview of the Provincial Crime Rates between 2011 and 2016

4.1.1.5 Economy

According to Community Survey 2016, the intensity of poverty³ in the province increased by from 42.8% in 2011 to 42.7% in 2016. In 2011, the average annual household income in Mpumalanga was an estimated R 30 000 per household, which is about the same amount as South Africa as a whole. This translates to a monthly household income of approximately R 2 500, which places the majority of households in the lower middle income category. The overall employment rate is very low at an estimated 37.5% employed, the majority (69%) in the formal sector.

4.1.2 Gert Sibande District Municipality

The GSDM is one of three districts in Mpumalanga. It covers a geographical area of approximately 32 100 km², which is approximately 42% of the province's ground area. The district is bordered by Swaziland to the east, the Nkangala DM to the north and the Ehlanzeni DM to the north-northeast. Gauteng lies to the west, the Free State to the

³ The intensity of poverty (or poverty gap) is an indicator used to assess the extent to which the standard of living of the poor population is under the poverty line. In South Africa the poverty line (or absolute poverty) is deemed to be a monthly household income of R 1 600 or less for a family of 4.

southwest and KwaZulu-Natal to the southeast. The district's main seat is located in Ermelo with satellite offices in Carolina, Balfour and Piet Retief.

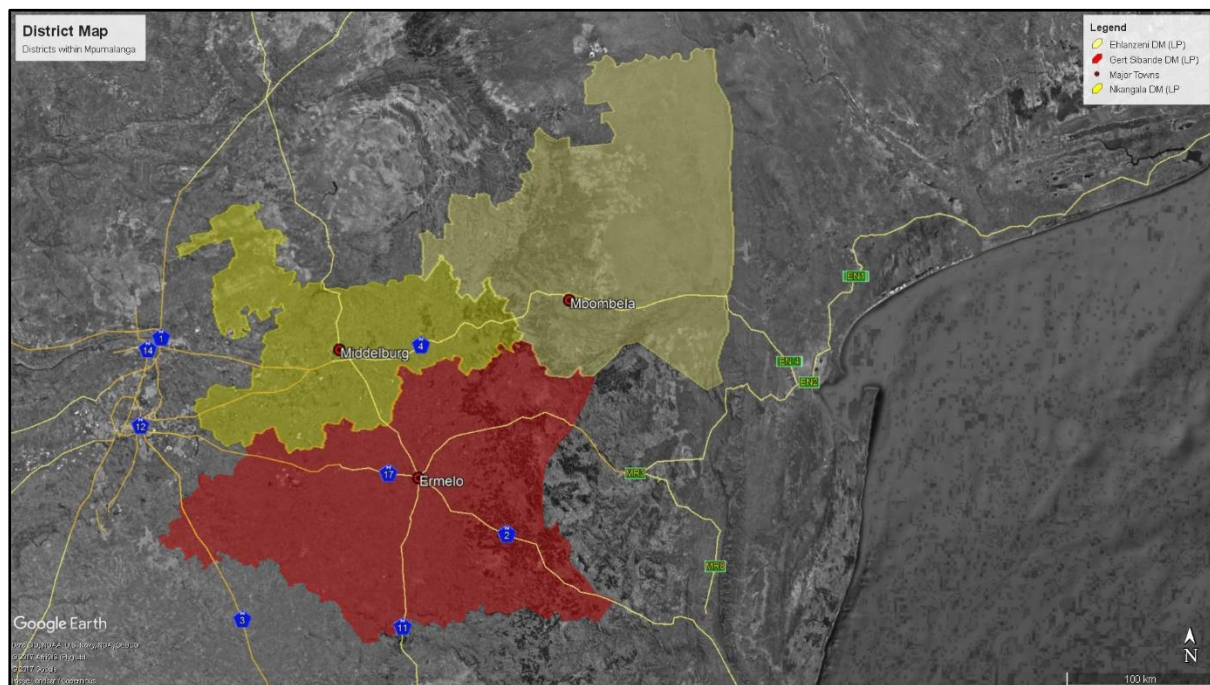


Figure 3: Overview of Districts within Mpumalanga

4.1.2.1 Population Demographics

In 2011 the GSDM had a total population of 1 043 200, which represents 25.8% of the province's population. The population increased to some 1 135 500 people in 2016 at a population growth rate of 1.76% per annum. The highest concentration of people are found in the GMLM. Of the 2016 population, slightly more than half (50.3%) were female and just more than a third (39.3%) were between the ages of 15 and 34 (i.e. 'youth'). This is more or less in line with the 2011 profile when 50.7% of the district was female and 37.4% were considered youth. In line with the provincial profile, the predominant population group by far in 2011 was Black African (89%) followed by White (9%). Even though Community Survey 2016 did not include any racial data, it can be expected that the racial profile changed little between 2011 and 2016. Contrary to the province, the language most spoken at home in the district is IsiZulu (60%), followed by SiSwati (13%) and Afrikaans (9%) (Census 2011).

4.1.2.2 Education

No new data is available on the education profile of the district other than what is contained in the SIA (2014).

4.1.2.3 Household Services

The number of households in the district increased by some 60 300 between 2011 (± 273 500) and 2016 (± 333 800). This decreased the average occupancy rate slightly from 3.8 in



2011 to 3.4 persons per household in 2016. Formal housing increased by some 62 500 houses, while informal housing decreased slightly by about 1 000 hovels – it is estimated that the number of informal housing in the district stood at approximately 45 000 hovels in 2016. The majority of households (91.5%) have access to piped water, which is slightly higher than the provincial average of 88%. More than two thirds (approximately 70.2%) of households have access to a flush/chemical toilet, which is slightly higher than 2011's 67.1%. Close on 9 out of every 10 households (or 89.4%) are connected to electricity (Community Survey 2016).

4.1.2.4 Health and Safety

According to the GSDM IDP (2016/17), the district remains one of the districts with the highest HIV prevalence rates in the country, even though it reduced slightly from 45.9% in 2012 to 40.5% in 2013. For this reason, the GSDM implemented a HIV/AIDS Strategy and Plan (2012-2016) as a multi-sectoral intervention aimed at providing strategic and policy direction in combating TB and HIV/AIDS in the district, as per the following strategic goals:

- Increase the number of prevention interventions to reduce the rate of new infections;
- Improve access to treatment; and
- Mitigate the socio-economic impact of HIV/AIDS, TB and other STIs, especially amongst the most vulnerable groups.

The HIV/AIDS Strategy and Plan concluded at the end of 2016 and is currently under review to establish its effectiveness. No new data is available on the TB prevalence rate in the district.

The SAPS crime statistics do not provide crime rates on a district or municipal level and therefore it is difficult to determine the crime rate in the district without considering all the police stations in the area (which is unknown). The GSDM IDP (2016/17) only states that the crime rate seems to be decreasing but does not provide any further information or data to substantiate the claim. It does, however, state that the following aspects are key in affecting the safety and security of residents in the district:

- Poorly designed settlements increases emergency services' response time;
- RDP houses were constructed with very little consideration for residents' safety and security;
- Most CBDs are too congested which complicates security measures;
- The high number of liquor stores in relation to other community facilities;
- Poor planning of taxi ranks across the district;
- Poor lighting in some areas;
- The general condition of the roads in the district;
- Insufficient support from communities to community safety programmes;
- A general lack of care in some communities to prevent crime; and

- Visible policing.

4.1.2.5 Economy

No new data is available on the employment rate and economic sectors of the district other than what is contained in the SIA (2014).

4.1.3 Govan Mbeki Local Municipality

The GMLM is one of seven local municipalities in the GSDM and is located in the western quadrant of the district. It covers a geographical area of approximately 2 960 km² (approximately 9.2% of the district's land surface), which makes it the second smallest municipality in the district. The municipality's main seat is Secunda.

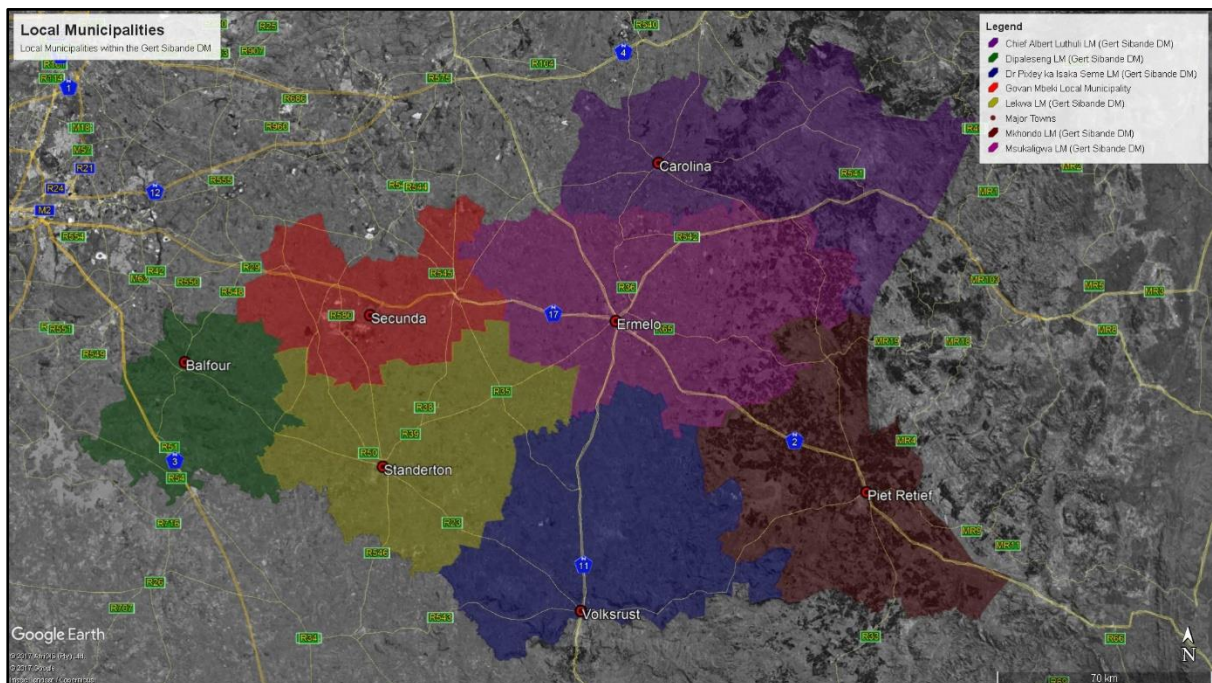


Figure 4: Overview of Local Municipalities within the Gert Sibande District

4.1.3.1 Population Demographics

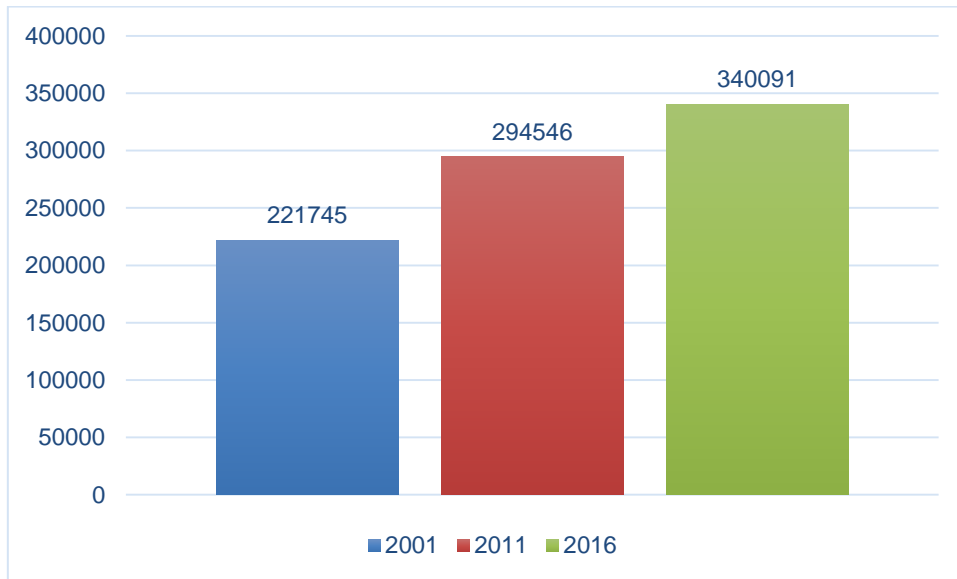


Figure 5: Population Growth in the GMLM between 2001 and 2016

The GMLM population exceeded the 340 000 mark in 2016, representing a rather rapid population growth rate of approximately 3.1% per annum when compared to the other municipalities in the district. Just over half of the population is male (approximately 52%), which is similar to the gender profile of 2011. Similar to the provincial and district profile, the predominant population group is Black African (86.3%), which is also the only group who showed a positive growth rate between 2011 and 2016.

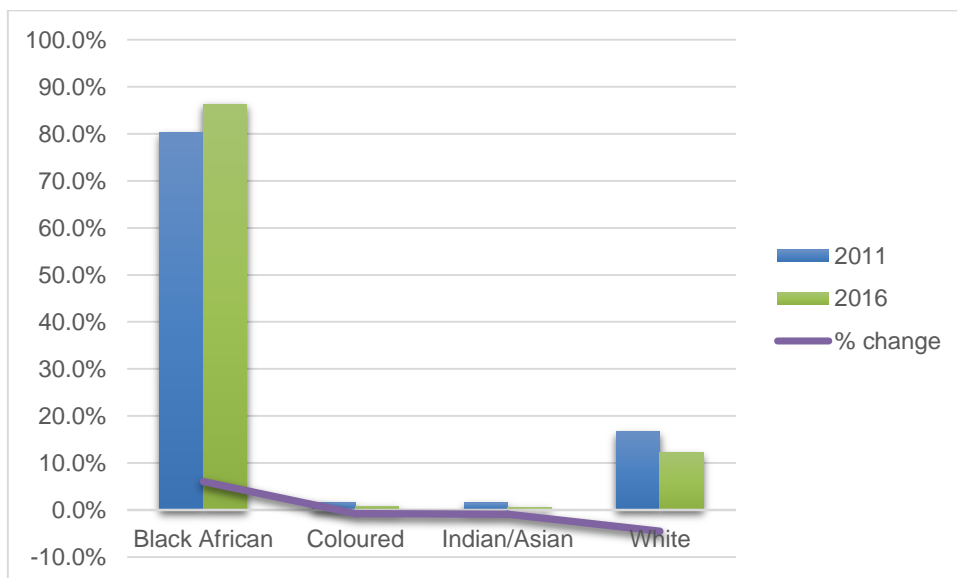


Figure 6: Overview of Changes in the GMLM Population Groups between 2011 and 2016

In line with the GSDM, the language most spoken at home is IsiZulu (47%), followed by Afrikaans (16%). According to the GMLM IDP (2017-2022), by far the majority of its population (96.8%) can be found in urban areas.

4.1.3.2 Education

According to the GMLM IDP (2017-2022), there was a significant change in the education profile of the municipality between 2011 and 2016 – although there was a general increase in the number of people who completed some primary, secondary and higher education, there was also a significant increase in the number of people who had no schooling. The IDP offers no explanation for this change in its educational profile (especially as it relates to the spike in the population who completed no schooling) but it is suggested that the data be approached with some caution as the IDP appears to have grouped its education profile differently than the StatsSA categories.

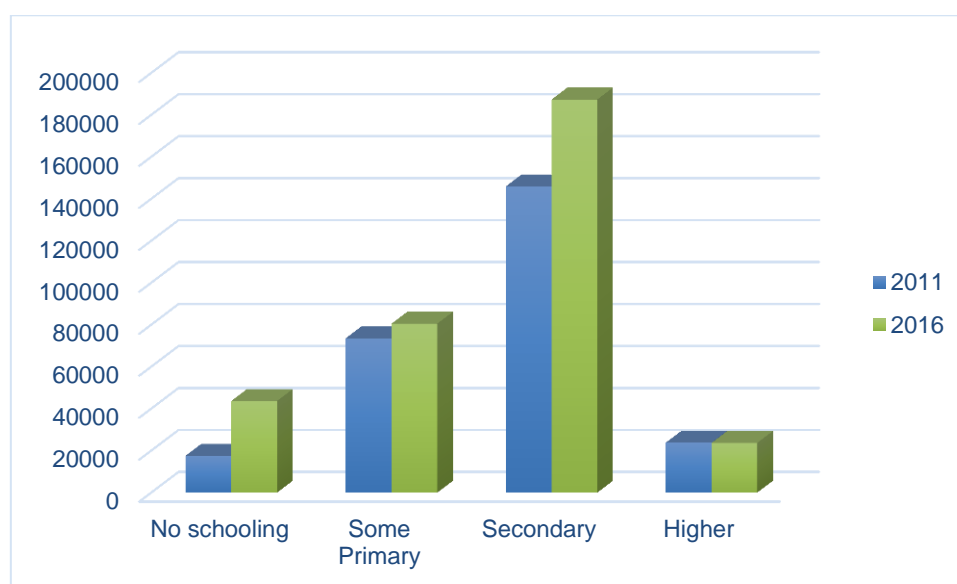


Figure 7: Overview of Changes in the Education Profile of the GMLM between 2011 and 2016

4.1.3.3 Household Services

The GMLM consisted of approximately 108 900 households in 2016, up by some 25 000 households from 2011. The increase in the number of households led to a decrease in the occupancy rate, from 3.5 persons per household in 2011 down to 3.1 in 2016. There was also an increase of close on 23 500 formal houses coupled with a simultaneous reduction in informal housing by some 1 200 structures. The majority of households (98.4%) have access to piped water, which is somewhat higher than the district average of 91.5%. Almost all households (94.7%) have access to a flush/chemical toilet, which is slightly higher than

2011's 91%. More than 9 out of every 10 households (or 94.4%) are connected to electricity (Community Survey 2016).

4.1.3.4 Health and Safety

No new data is available on the HIV/AIDS and TB profile of the GMLM other than what is contained in the SIA (2014).

To obtain an indication of the GMLM's crime rate trends, statistics from the six largest police stations were compared, i.e. Bethal, Embalenhle, Evander, Secunda and Trichardt. From Figure 8 below, it is evident that that largest concentration of crime is in Secunda and Embalenhle – in the latter case crime peaked in 2015/16. In all areas, property-related crimes and contact-related crimes are the biggest sub-categories of crime, except in Emalenhle where contact crimes (crimes against the person) are also widespread.

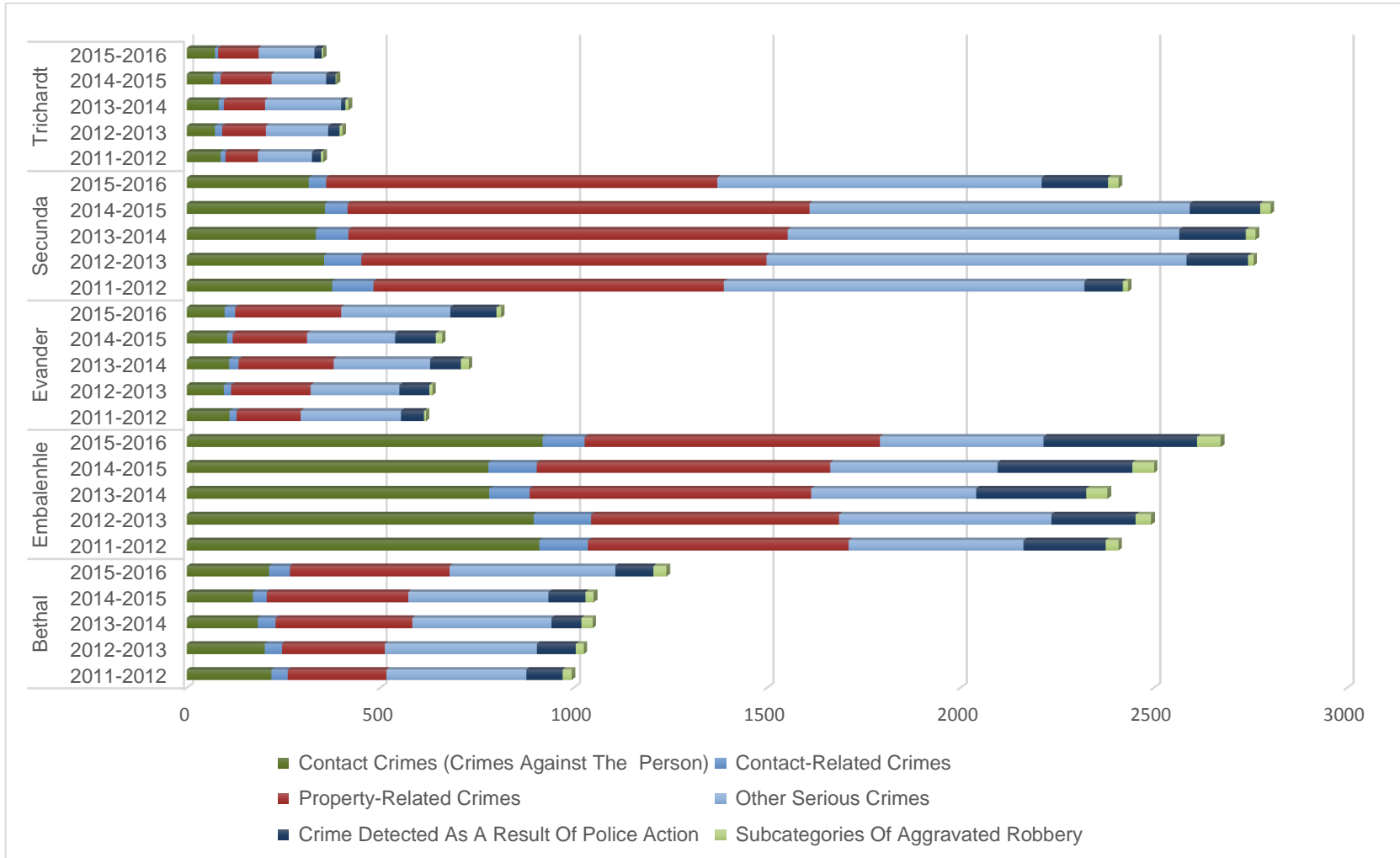


Figure 8: Overview of Changes in the Crime Rate in GMLM between 2011 and 2016

4.1.3.5 Economy

The employment rate in 2011 stood at 48.5%. The GMLM IDP (2015-2022) does not provide an updated number but did state that the mining sector is the main employer in the area, providing approximately 28% of all employment opportunities, with a 39% share in the region's GDP. Other main contributors to the regional GDP are manufacturing (24%), wholesale and trade (15%) and Government and community service (9%).

The average annual household income in 2011 was R 57 500, which was almost double than the district's R 30 000. This places the majority of households in the GMLM in the middle income bracket.

4.2 Updated Profile of the Primary Study Area

This section provides an updated version of the socio-economic baseline profile of the directly affected study area, i.e. Wards 5, 15 and 25 of the GMLM. Originally the bulk of the project site was located in Ward 15 of the GMLM with only its southern tip extending into Ward 5, as shown in Figure 9 below.

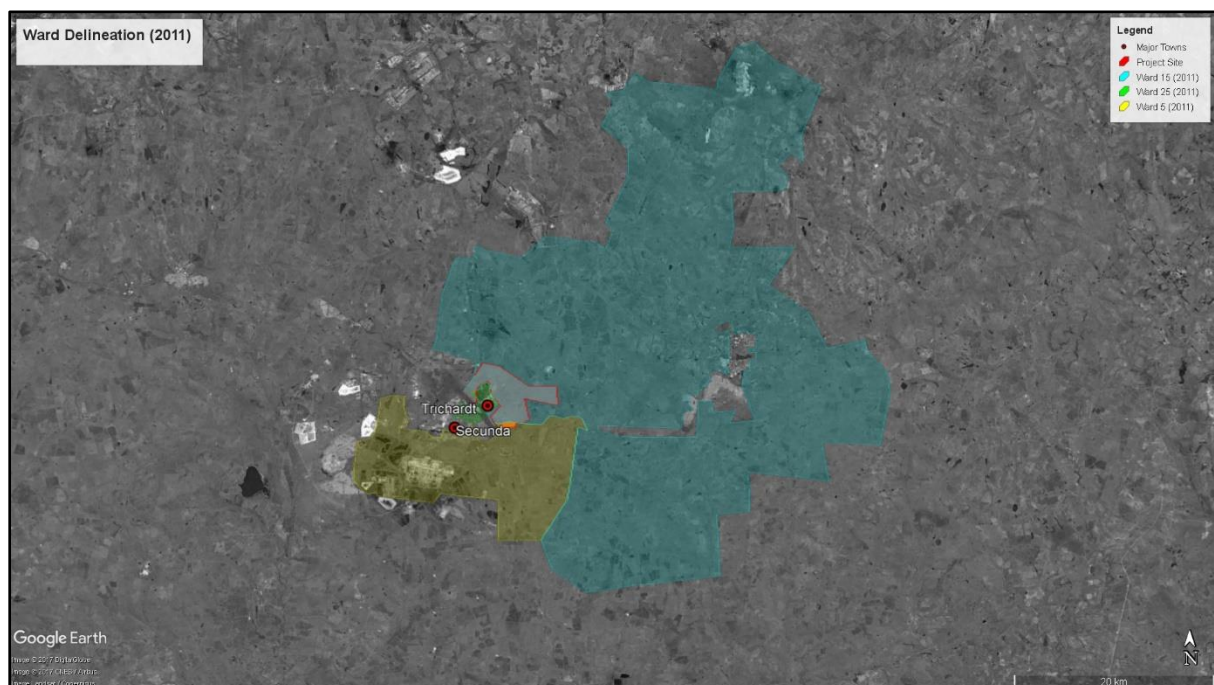


Figure 9: Original Project Site within Affected Wards (2011)

With the local municipal elections of 2016, the Municipal Demarcation Board amended ward boundaries in most municipalities with the aim to “deepen local democracy and promote local governance” (MDB website). In addition, the original project site was extended to also include neighbouring Vaalkop and Thubelisha into the TCTS. This had the effect that the

project site now affects large portions of the newly delineated Wards 15 and 25, with the southern tip of the project site located in the northern portion of Ward 5, as shown in Figure 10 below.

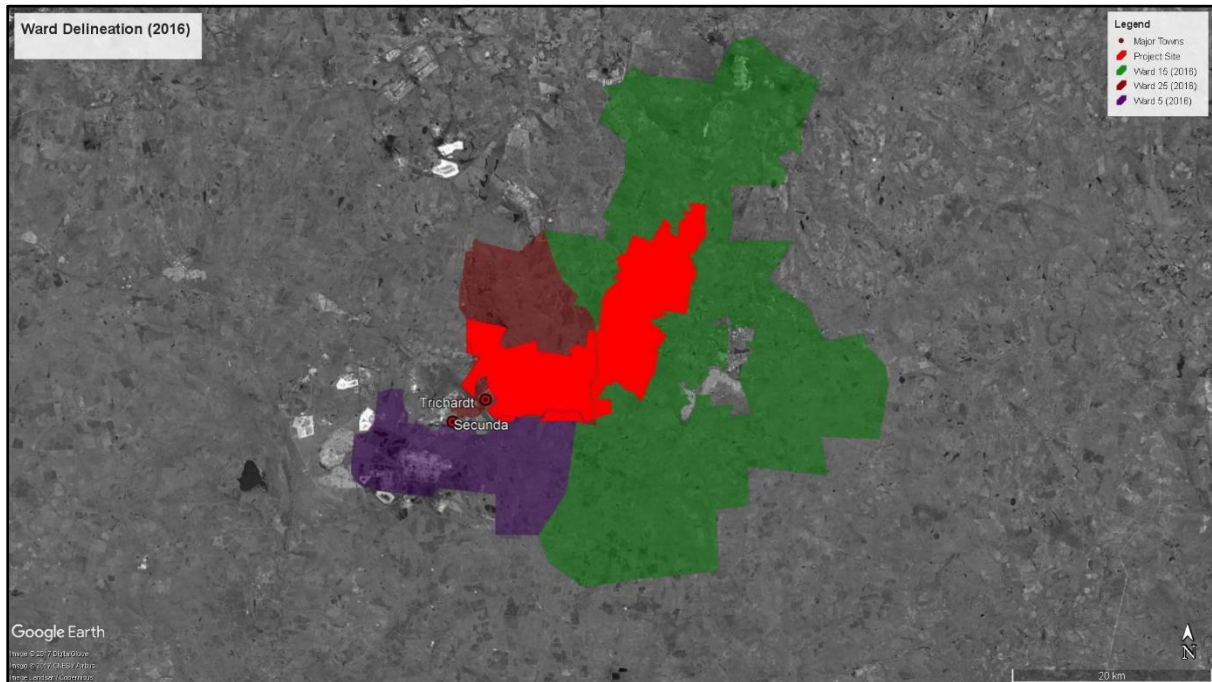


Figure 10: Amended Project Site within Affected Wards (2016)

The remainder of this section will provide an overview of the directly affected area by using data from Wazimap, which was built on Census 2011 data that was regrouped according to the new ward boundaries from the 2016 Municipal Elections. The wards will cumulatively hereafter be referred to as the ‘project area’.

4.2.1 Population Demographics

The project area covers approximately 1 700 km² and has a total population of roughly 32 400, of which most reside in Ward 25 (39.6%), followed by Ward 15 (31.9%) and Ward 5 (28.5%).

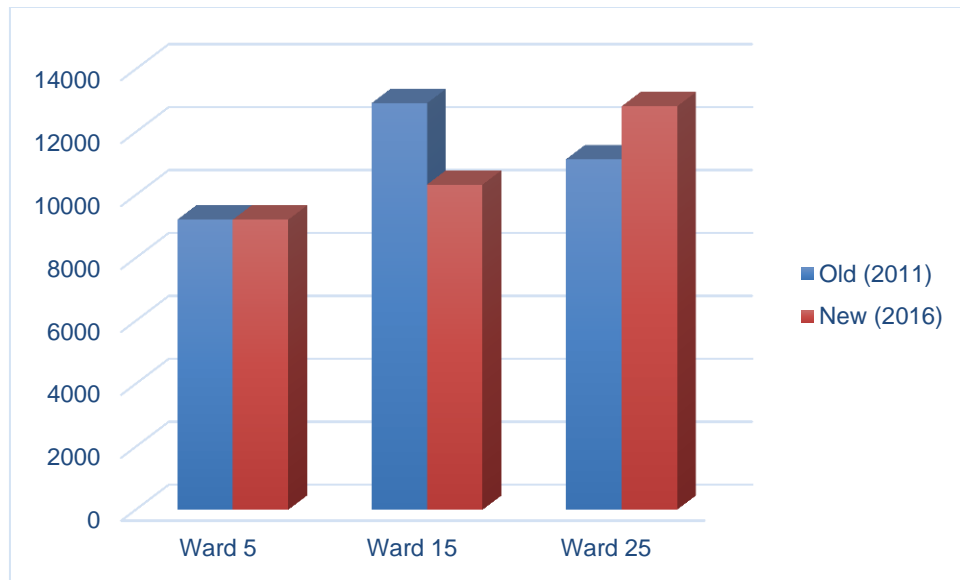


Figure 11: Change in Population Size per Ward as a result of New Ward Boundaries

The average population density is around 19.1 persons per km², with the highest population density in Ward 25 (64/km²) and the lowest in Ward 15 (10/km²). More than half (53.3%) of the project area’s population is male, with the highest concentration (55.7%) found in Ward 5.

Except for Ward 15, the predominant population group in the project area is White (an average of 54.4%). The project’s areas racial composition is reflected in Figure 12 below.

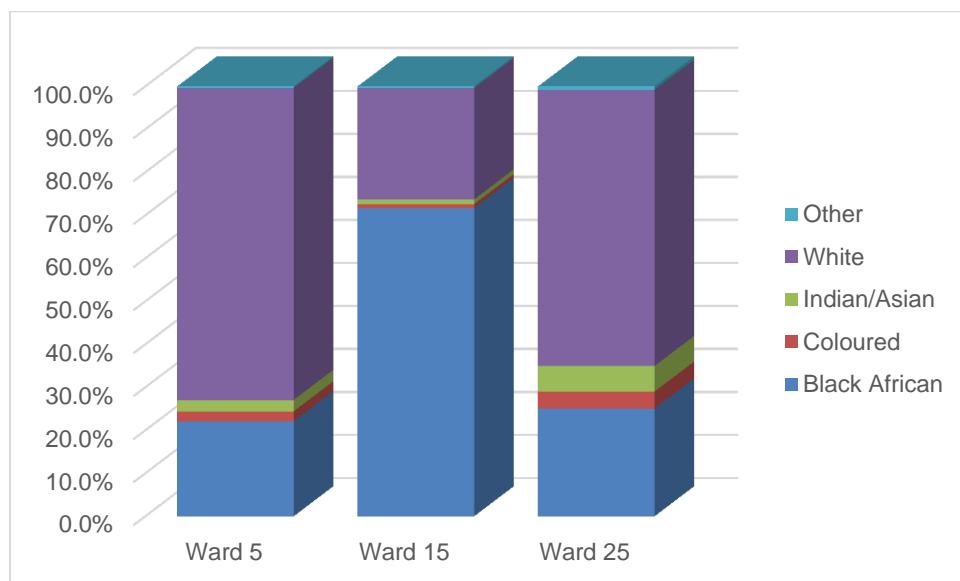


Figure 12: Overview of Population Groups per Ward in Project Area

In line with the racial profile of the project area, Afrikaans is the language most spoken at home (53.7%) – more so in Wards 5 and 25.

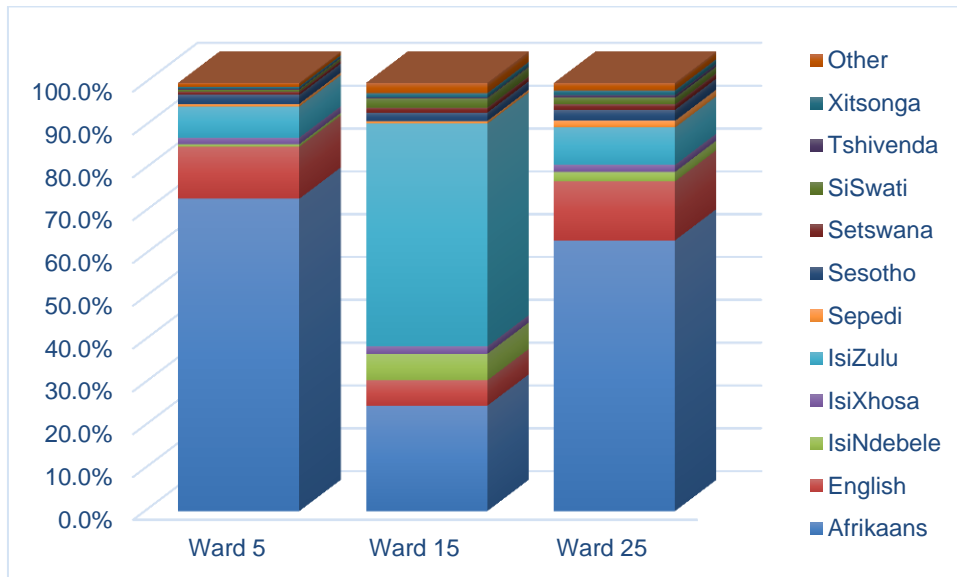


Figure 13: Overview of Home Language per Ward in the Project Area

On average, more than two thirds (68.1%) of the project area’s population is within the economically active age group (18-64), with the largest concentration of this age group in Ward 5 (72.1%). Close on a third (29.8%) of Ward 15’s population are children (aged <18).

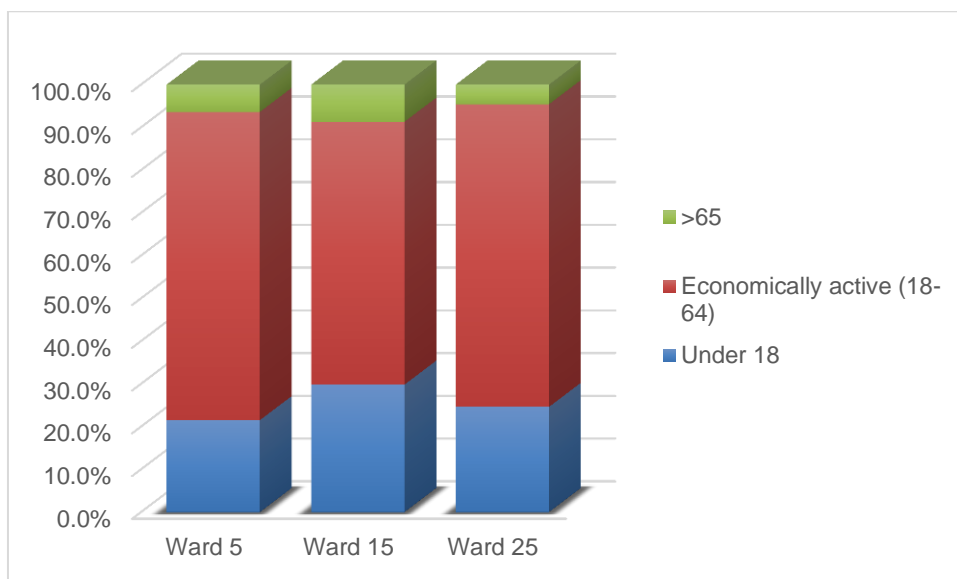


Figure 14: Overview of Age Groups per Ward in the Project Area

4.2.2 Education

On average, close to a third (30.9%) of the project area’s adult population obtained Grade 12. The highest concentration of adults who had no schooling is found in Ward 15 (12.6%). Both Wards 5 and 25 have a significant portion (28.5% and 26.3% respectively) of the adult population who completed a post-matric qualification, ranging from a certificate with Grade 12 to diplomas post PhD-degree.

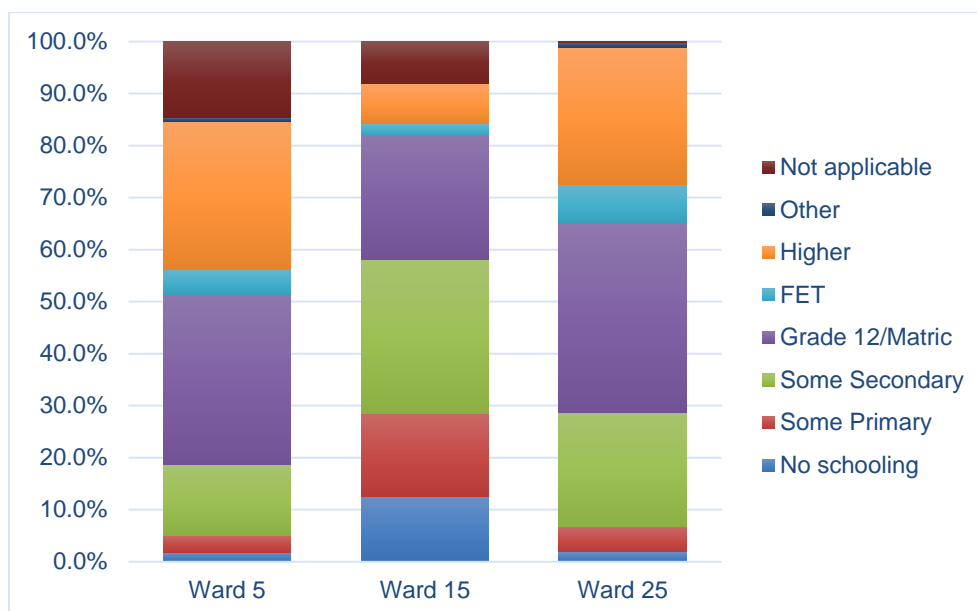


Figure 15: Overview of Education (Grouped) per Ward in the Project Area

The IDP (2017-2022) provides no information on the number or state of schools in the project area. Other wards (i.e. Wards 9, 14, 16, 19, 20, 22 and 32) all list the upgrade and/or construction of school(s) as priority community development needs that require urgent attention.

4.2.3 Household Services

The project area consists of approximately 9 000 households at an average occupancy rate of 3.6 persons per household. Of the 9 000 households, approximately 800 were hovels – the largest number of these (approx. 620) were located in Ward 15. On average, a third of houses (approximately 39.8%) in the project area are rented, with as high as 47.7% in Ward 25. Ward 15 has the largest segment of houses that are owned and fully paid off (20.7%) along with a significant number of houses that are occupied rent free (26.7% against Ward 5’s 6.2% and Ward 25’s 9.1%). Figure 16 below provides an overview of tenure status per ward in the project area.

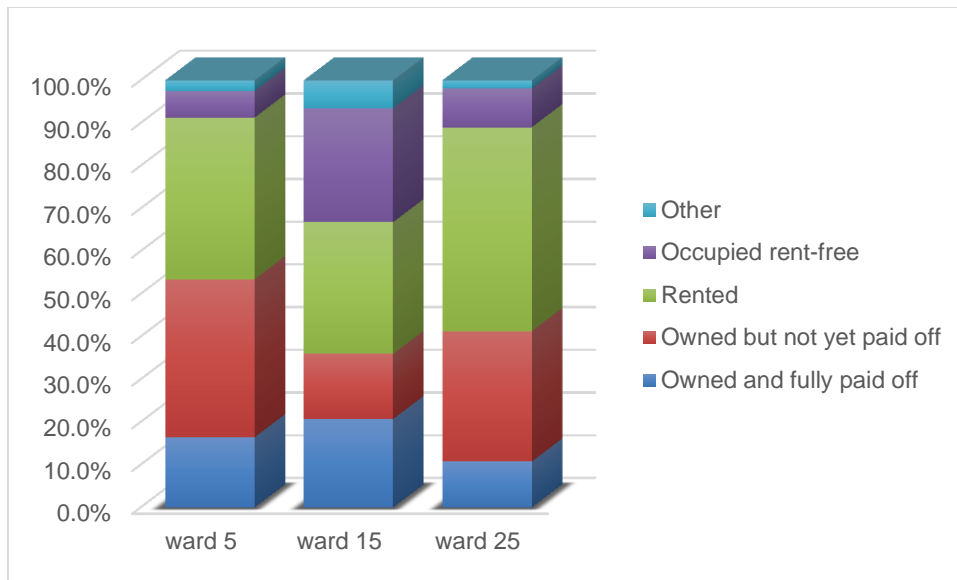


Figure 16: Overview of Tenure Status per Ward in the Project Area

On average, 83.1% of all households had piped water supplied by a regional/local water scheme (most often the local municipality). However, Ward 15 still had a large proportion of households who relied on a borehole (15.8%) or a roaming water tanker (11.5%) as their primary water source. Figure 17 below provides an overview of primary water sources per ward in the project area.

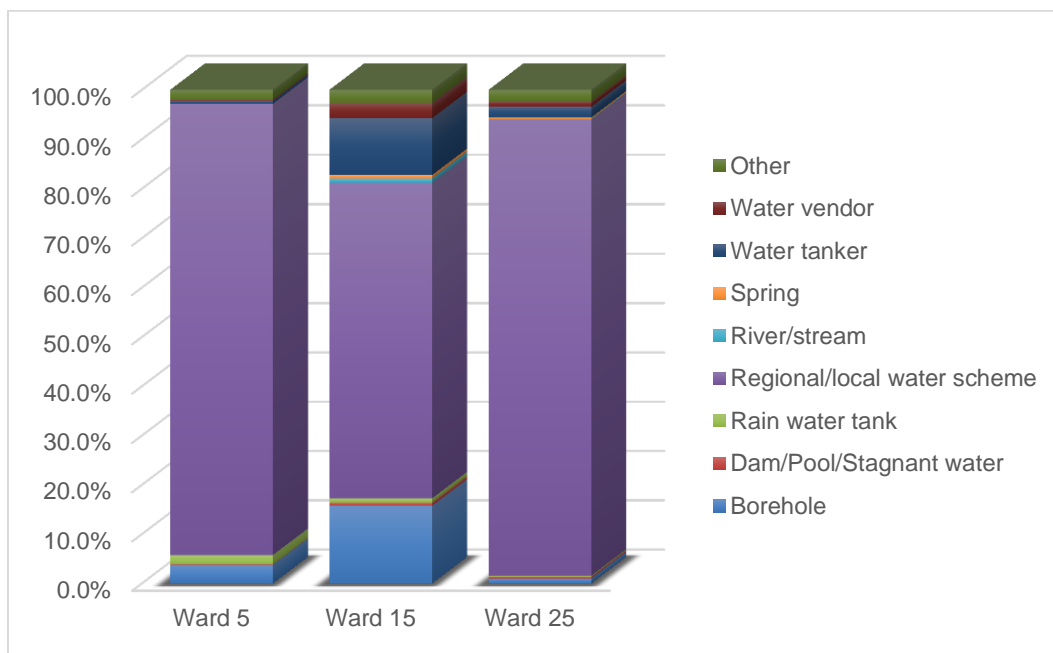


Figure 17: Overview of Primary Water Source per Ward in the Project Area

Although the majority of households on average (85%) have access to toilet facilities on par with RDP standards (any flush system connected to either a sewerage system or septic tank), slightly more than a third (34.5%) of households in Ward 15 only have access to a system below RDP standards (no flush system, VIP without ventilation or bucket system). Refer to Figure 18 below for an overview of the toilet facilities per ward in the project area.

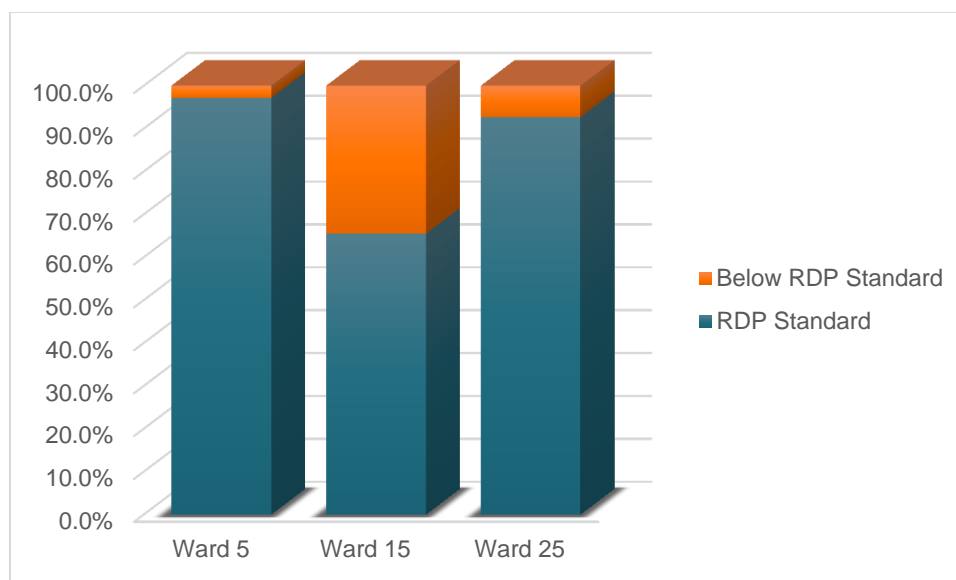


Figure 18: Overview of Toilet Facilities per Ward in the Project Area

Unfortunately, Wazimap did not include any reformatted data on the number of households connected to the electricity network. However, Census 2011 data as per the old ward boundaries showed that, on average, 78.4% of households in the project area use electricity for cooking, 70.4% for heating and 88.4% for lighting. As is currently the case with the new ward boundaries, Ward 15 was not on par with the other 2 wards: only 51.2% of its households used electricity for cooking (other energy sources included coal [23%], paraffin [9.4%] and wood [8.2%]) and 45% for heating (other heating sources included coal [26.1%] and wood [9.2%]). Also, only 70.2% of households in Ward 15 used electricity for lighting as opposed to 96.1% in Ward 5 and 99% in Ward 25.

In terms of refuse removal, on average 77.6% of all households in the project area's refuse is removed at least once a week by the local authority. However, this is only true for half (50.6%) of households in Ward 15, compared to 90.3% in Ward 5 and 90% in Ward 25. Just over a third (37.1%) of households in Ward 15 still make use of their own refuse dumps for waste disposal. Untreated waste that is not properly stored can cause health impacts.

4.2.4 Health and Safety

There is no specific data available on the health status of the project area.

The Trichardt police station is the only police station that is located within one of the wards of the project area. Due to its close proximity to the project area, it was assumed that the Secunda (ward 21) and Emzinoni (ward 26) police stations also service the project area and therefore statistics from these three police stations were used to develop an overview of the crime rate of the area.

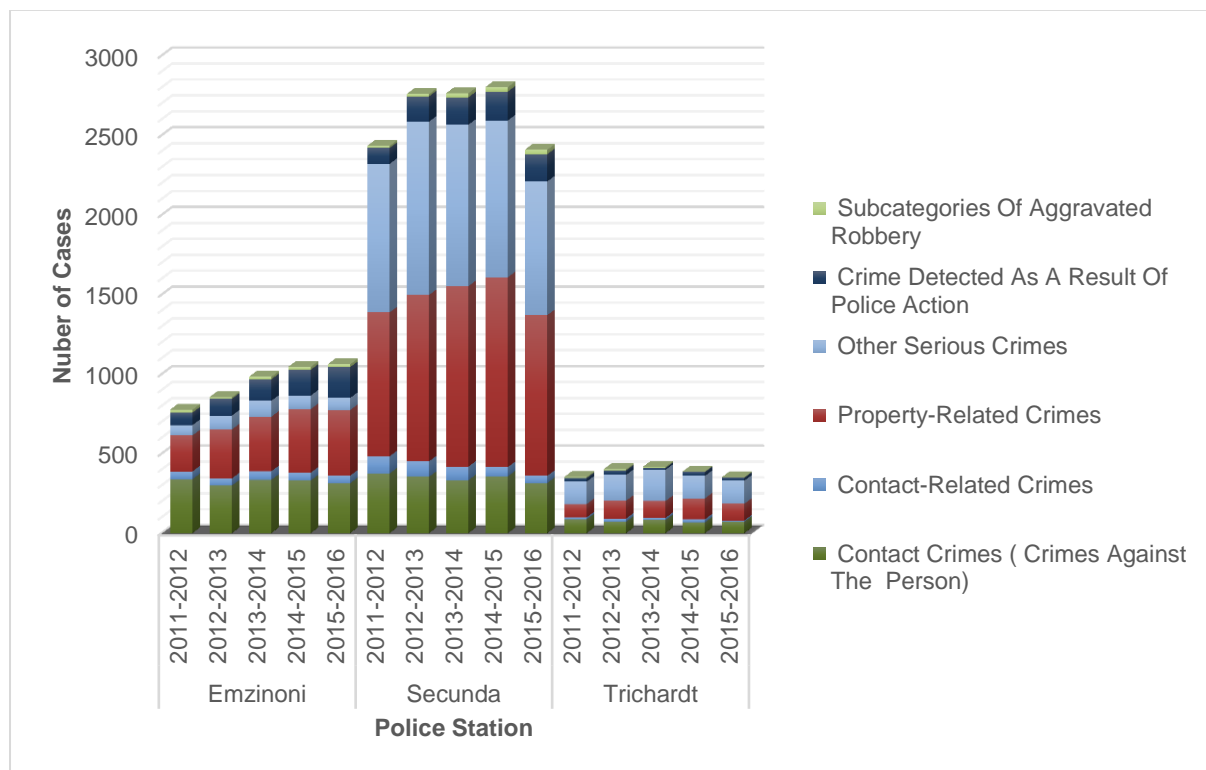


Figure 19: Overview of Crime Rate in the Project Area (2011-2016)

As is evident from Figure 19 above, Secunda has the highest case load followed by Emzinoni and then Trichardt. The crime rate in Secunda and Trichardt seems to be on the decrease whereas in Emzinoni there appears to be a rise in crime. Property-related crimes and contact crimes (crimes against the person) are dominant in all areas. The crime rate in Trichardt seems to have peaked in 2013/14 after which is started to decrease steadily.

4.2.5 Housing and planned development

4.2.5.1 Housing shortage

The GMLM IDP estimates the housing backlog to be approximately 58 000 units. The GMLM is in the process of acquiring 3 800 ha of land to accommodate the growth in the municipality (based on economic growth of 3%). A number of low cost housing projects are under way, which will provide approximately 13 440 stands. The shortage of affordable housing is also evidenced by the growing number of informal settlements throughout and site-specific and

primary study area. These settlements include stand-alone settlements such as Holfontein, and smaller settlements on farms, where farm owners are allowing settlers to stay on their farm, as well as informal extensions of formal townships such as in eMbalenhle.

In addition to catering for the existing backlog, the GSDM also receives several township establishment applications per year for new housing developments. All these housing developments will require services and infrastructure such as waste collection and bulk water supply, which the District and Local Municipalities currently struggle to provide.

4.2.5.2 Home ownership

Roughly equal proportions of households in the GSDM (40%) and GMLM (38%) own their homes and have paid it off. This is close to the national average of 41%. The proportion of households in the local municipality who are renting (36%) is 11% higher than the national average. This could be an indicator of a semi-permanent population that will leave the municipal area after their work commitments come to an end. This is congruent with the age groups that highlight a smaller population in the local than district municipality before and after the working age group from 20 to 59.

4.2.5.3 Type of dwelling

Nearly three-quarters of households in both municipalities live in formal dwellings. The remainder in the GSDM is split between traditional (10%) housing and informal dwellings (17%). The GMLM has a significantly larger proportion of informal dwellings (28%), which is likely an indicator of the influx of job-seekers and lower wage employees into the local municipality, where job opportunities are more prevalent than across the district (also see Section 4.7.1)

Informal settlements are most prevalent in Lebohang, eMzinoni/ Milan Park and eMbalenhle where there are 500, 3 150 and 4 000 un-serviced shacks respectively (GMLM IDP 2012-2015). Several smaller informal settlements are scattered on the farms comprising the study area.

4.2.5.4 Planned residential developments

4.2.5.4.1 Terra Nova Township

Terra Nova Township, located just north of Trichardt (see Plan 6), is a proclaimed township owned by Tornicorp (Pty) Ltd, and will consist of four extensions (Terra Nova Extension 1-4). The first phase of the development comprising 159 townhouses, have been sold out, and bulk services for this development have been partially installed. Currently people are already residing in the Cosmos extension of the township (see Figure 16). The DMR has already granted consent for the Township in terms of Section 53(1) of the MPRDA, 2002 (Act No 28 of 2002) and agreements are in place between the Township Owner and the Mineral Rights Holder, not to undermine the area under the Township footprint.



Figure 20: Occupied Cosmos View Complex in Terra Nova

4.2.5.4.2 Trichardtfontein Extension 8

This development is situated on the north western edge of the proposed mining right area on portions 21 and 22 of Trichardtfontein 140 IS (see Plan 6). A township application has been submitted for the development, but it is currently being appealed. The developer intends to develop the section to the north of the N17 roadway into a residential area, while the southern edge will be reserved for light industrial and business uses.

The property includes an intersection on the N17, which as indicated in the Municipal SDF, can in future connect to Secunda, possibly forming a major entrance to the Town. Another entrance to Trichardt is also possible from this intersection. It could be argued that the aforementioned features significantly increase the potential value of the land, assuming that township approval is granted. It is noteworthy that as with the other proposed development, the developer has already incurred substantial financial costs in setting up the township application, and will experience a financial loss of investment if residential development is restricted.



Figure 21: N 17 intersection at Trichardtsfontein Extension 8

4.2.5.4.3 TARU Township

A Section 53 consent (which is also under appeal) has been issued by the DMR for the development of the Township, which would comprise Portions 16, 52 and 53 of Trichardtsfontein 140-IS. The Township is situated towards the western edge of the mining right area (see Plan 6), and is currently awaiting final approval.

It is envisaged that the TARU Township will comprise mixed uses, consisting of a variety of zonings and densities. Approximately 1 500 to 1 700 residential opportunities can be provided for in the Township.

At this stage no services have been installed on the site for the purposes of the Township, however the Township will partly make use of the existing infrastructure such as the sewer works, water network, and existing substations for electricity.

4.2.5.4.4 Secunda Extension 8

The proposed township is to be located towards the north-western border of Trichardt, and north-east of Secunda (see Plan 6). The owners of the property have done a preliminary Township Development Plan to develop 700+ residential opportunities on the property. The property is serviced by the main road connecting Trichardt and Secunda. The existing railway line forms the Eastern boundary of the property. There is also a main water line from Rand Water Works running alongside the railway line providing adequate access to the provision of water for any development on the property. The developers have not yet formally applied for a township. Like several of the other proposed residential developments, the developers ultimately intend to provide housing options for the medium to upper socio-economic class.



Figure 22: Proposed site for the Secunda Extension 8 Township

4.2.6 Economy

The overall employment rate of the economically active population in the project area is around 45.5%, with the lowest employment rate in Ward 15 (35.9%) and the highest in Ward 25 (52.6%). An overview of the employment status per ward is reflected in Figure 23 below. Neither Wazimap nor the GMLM IDP provides further information on the employment sectors in the project area.

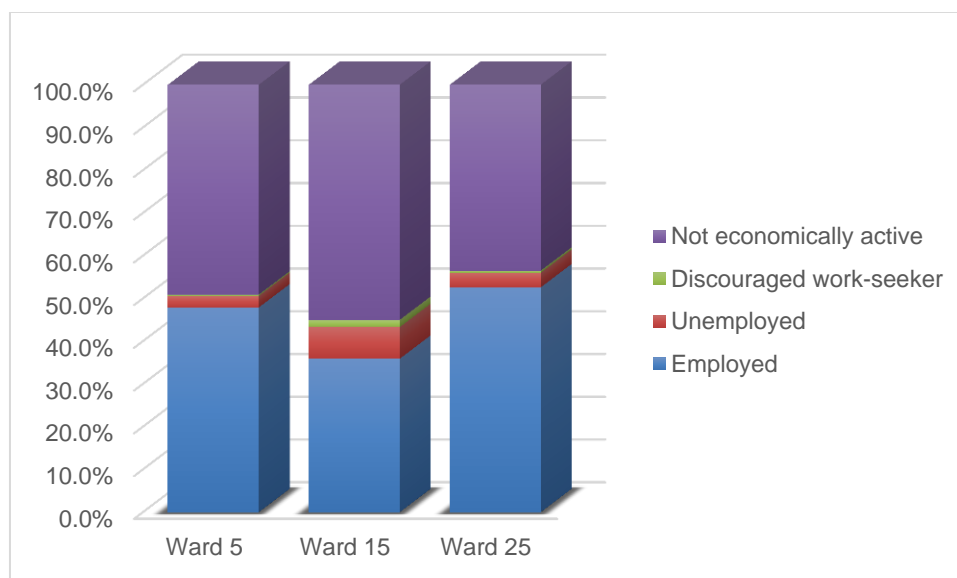


Figure 23: Overview of Employment Status per Ward in the Project Area

More than a third (38.2%) of households in Ward 15 lived in absolute poverty, which is defined as an annual household income of R 19 200 or less (or \leq R 1 600 per month) for a family of 4, i.e. the family is unable to meet their basic food needs. A further quarter (24.5%) of the ward fell into the lower middle income bracket (\leq R 76 000 per annum). In comparison, most of the households in Wards 5 and 25 lived in the middle to high income brackets, as reflected in Figure 24 below.

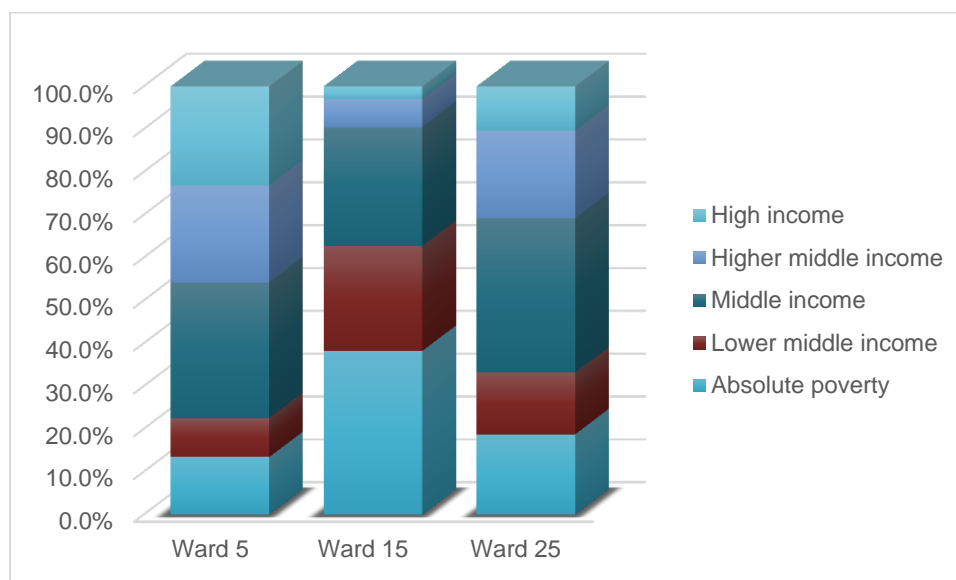


Figure 24: Overview of Annual Household Income per Ward in the Project Area

4.3 Site-Specific Study Area

This section describes the socio-economic characteristics of the site-specific study area, as defined in Section 3.2.1. Secondary, describing the site-specific area has been derived from the site visit conducted in 2014, including engagement with stakeholders, a review of available photographs, and a review of specialist reports.

4.3.1 Land Use

Commercial agricultural is the most dominant land use in the District while the petrochemical industry is the main contributor to municipal output. Mining, particularly coal mining, is also an important land use, with Secunda being the most active business area in the municipality. The expansion of industrial activity, while promoting economic growth, has led to the encroachment of agricultural land.

Similarly, the most dominant land use within the proposed mining right area is agricultural activities, with several commercial maize farms located within the primary study area (see Figure 10). Soya is also commonly cultivated. The land is also to lesser extent used to graze livestock; particularly cattle (see Figure 11). The figure below depicts the major land uses in the area (see Plan 4 below).



Figure 25: Commercial maize farm

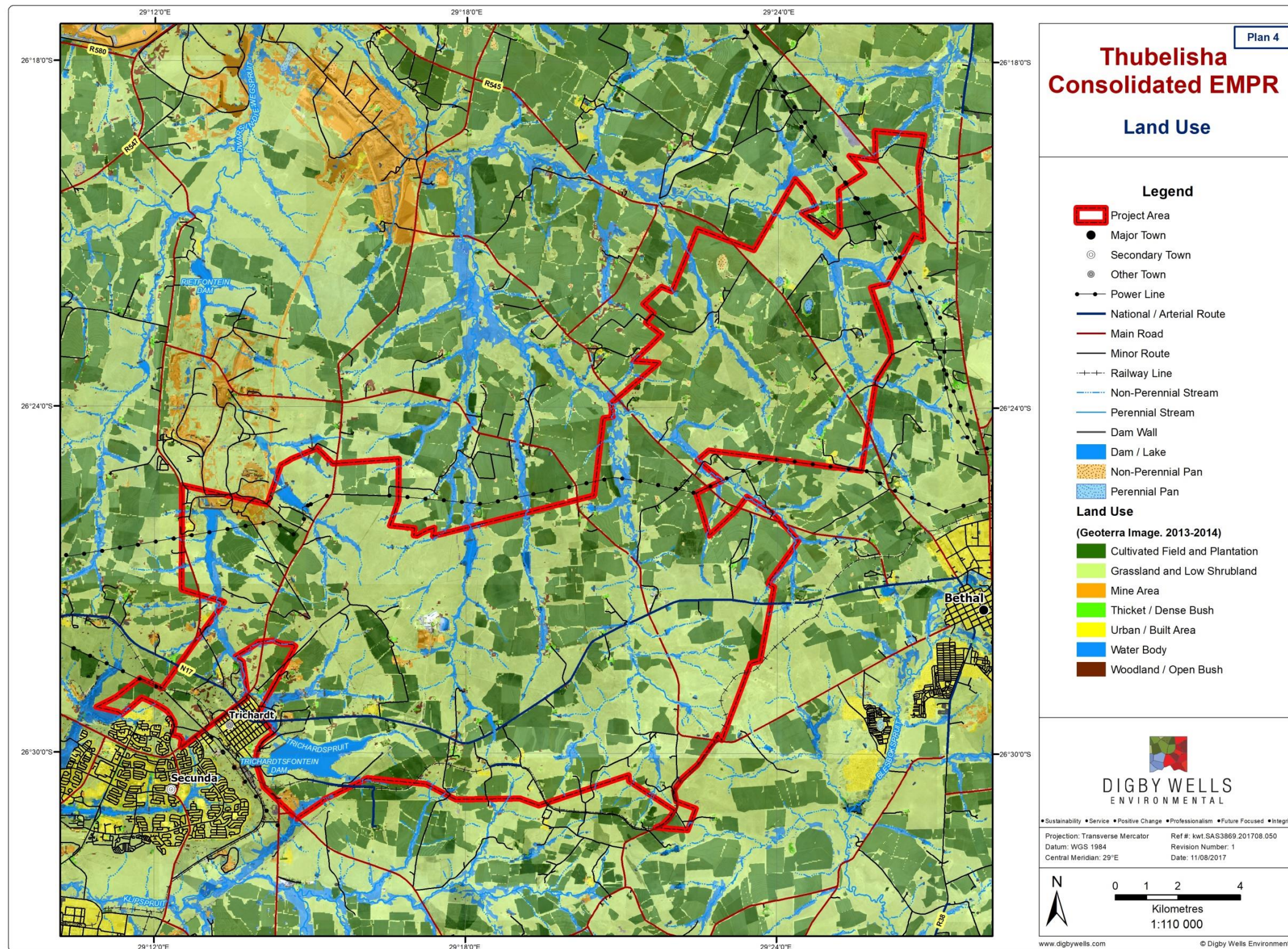


Figure 26: Cattle grazing

The Trichardtsfontein Dam is situated towards the eastern border of the primary study area (see Plan 1). The dam facilitates several land and water uses. Firstly, a relatively small community permanently resides at the dam renting stands from the Department of Water Affairs. Another section of the dam is used by sailing and angling clubs. The dam also offers a tourism/recreational attraction in that it serves as both camping and fishing grounds.

Several business properties are also located within the proposed mining right area (e.g. Secunda Nursery, Agata Eiendomme CC, Barka Eiendomme (Pty) Ltd and Gosler Prop (Pty)

Ltd.). Another major land use includes the Terra Nova residential development, which is situated just north of Trichardt.



Plan 4: Land use within the project area

4.3.2 Land tenure and ownership

The Restitution of Land Rights Act, 1994 (Act No. 22 of 1994) allows individuals or groups to claim land, from which they were previously dispossessed after 19 June 1913 under the apartheid regime. Claimants were given until 31 December 1998 to register a claim in terms of the Restitution of Land Rights Act. During this period approximately 80 000 claims were lodged throughout South Africa.

The Regional Land Claims Commissioner is responsible to verify the rightful claimant, validity of the claim, identify the beneficiaries and determine the extent of the land claim. This is the research stage of the claim. Once this has been completed, the claim is gazetted and therefore development on the land is at risk the claim is settled. This therefore has development implications for existing land owners and surface or mineral rights holders as further development on land, which has a land claim is a risk.

During field investigations it was alluded to by the municipal representatives that there is a high probability of a land claim on a portion of the farm Trichardtsfontein 140 IS. The validity of this claim is still pending and in the 'research' stage and therefore has not been gazetted.

According to the SDF (2013) the GMLM owns a limited amount of land in the area surrounding Trichardt. The majority of the study area is under private ownership.

4.3.1 Social Services

4.3.1.1 Road infrastructure and traffic

During field investigations completed in 2014, it became clear that several secondary roads are heavily deteriorated, partially due to other heavy motor vehicle (HMV) traffic. This is especially evident throughout the town of Trichardt. Furthermore, traffic is a prevailing problem in the area, and traffic is especially heavy on access roads to and from the N 17. Traffic usually peaks during shift changes at Sasol's plants. Several measures have already been put in place to alleviate congestion in the area.

4.3.1.2 Sanitation

During consultation undertaken for the impact assessment in 2014, several stakeholders reiterated that existing sewerage infrastructure is unable to accommodate the sewerage produced by surrounding communities; the sewerage especially becomes a problem during times of high rainfall.

4.3.2 Poverty, Vulnerability and Crime

Crime in general was identified by the informants as a problem within Trichardt and nearby farms. Crime prevention and safety were noted by most in the study area as a priority. The most common crimes in the area include prostitution, house breaking, robbery, and livestock theft is major problem in rural areas.

4.4 Attitudes, Perceptions and Concerns

Whilst this section summarises the perceptions and concerns expressed during the completion of the 2014 SIA; they have direct reference to this addendum report and must be considered when addressing and managing the identified social impacts.

At the time of the stakeholder meetings, it was noted that local communities were generally welcoming of the TCTS project, as they associated it with employment opportunities and other project related benefits. At the time, there existed considerable expectations for employment throughout communities, which are likely to have remained. Such expectations, if left unmanaged, engender negative feelings towards the project and the proponent, which might ultimately culminate in resistance to the project.

It should also be noted that stakeholders alluded to the fact that cases of xenophobia had been recorded in areas such as Embalenhle. It was suggested that similar events may continue to occur if people perceived as foreign are employed, instead of locals.

In public meetings held for the proposed project, discontent against the, then applicant Xstrata, was reiterated, with affected parties perceiving the company to be untrustworthy, and overriding the interest of several land owners. Although the nature of this perception against Sasol is unknown, the same stakeholders are applicable, hence partially applicable to this addendum report.

At the time of the initial SIA, it became clear that property developers felt especially marginalised. The major concerns of township developers included:

- That the mining activities will a) prevent them from developing their township, in which case they stand to potentially lose funds already invested in the development, as well as return on investment, b) result in undermining of the area underneath townships, which in turn may cause a devaluation of their property as result of public perception, and c) result in subsidence, which will not only damage/prevent development, but can also devalue land for agricultural and residential purposes;
- In general the affected developers suggest that residential development should preferably co-exist with the mining operation;
- Several developers suggested that they would prefer if the mine totally exclude their property from the mine plan, or buy the property from them at market set rates. With regard to the latter, developers are concerned that valuers would not consider the potential value of the land, but will evaluate the property as agricultural land, in which case the developers again stand to lose a large potential income;
- The Secunda nursery, at the time, raised concern over the future viability of its business, as it depends significantly on ground water to sustain itself. If, mining activities restrict or significantly decrease ground water, the business will perish as there is no access to water services.

5 Impact Assessment and Recommended Mitigation Measures

This section describes the socio-economic impacts associated with the proposed consolidation of the Mining Right areas. As the impacts identified as part of the SIA undertaken for Trichardtsfontein project did not consider the inclusion of Vaalkop, this section has been structured as follows:

- Section 5.1: Overview of impacts for the proposed consolidation (including previously identified impacts and any changes to these);
- Section 5.2: Summary of the impacts identified in the 2014 SIA, according to project phases;
- Section 5.3 New and updated impacts likely to take place through the proposed consolidation of Mining Right areas.
- Section 5.4: Cumulative impacts

5.1 Overview of Project Impacts

Although it is necessary to keep the complexity of social impacts in mind, it is also necessary to produce an SIA report that will be accessible to a non-specialist audience and meet the requirements of the project proponent. For this reason, predicted impacts associated with the proposed consolidation of the TCTS, Trichardtsfontein and Vaalkop Mining Right areas, have been categorised within the project phase (either construction or operation) they are likely to originate, recognising that many impacts will span over more than one project phase. This categorisation of impacts is shown in Table 9 below.

Table 9: Summary of potential impacts

Project phase and impact type		Impact name
Construction	Positive	Job creation during construction
		Multiplier effects on the local economy
	Negative	Increase in spread of communicable diseases and social pathologies
		Increased pressure on local services/ resources
		Establishment and growth of informal settlements
		Conflict/competition between newcomers and incumbent population
		Construction-related health and safety impacts
		Disruption of movement patterns
		Opposition because of perceived negative impacts
Potential financial implications for property developers		
Operation	Positive	Sustained employment during extended operations of the consolidated project
		Regional economic development
		Community development induced by LED and CSI
	Negative	Dependency on mine for sustaining local economy
		Operation-related health and safety impacts
		Potential subsidence induced impacts
Decommissioning	Positive & Negative	Impacts on the work force
		Impacts on the local community
		Impacts on the wider community (incl. Government)
Cumulative impacts	Positive	Job creation
	Negative	Impacts related to population influx
		Decrease in land for residential development
		Dependency on mine for sustaining local economy

5.2 Summary of Impacts identified in the 2014 SIA Report

This section provides a high level summary of the social impacts identified during the assessment of the Trichardtsfontein project, during 2014. Whilst these impacts were identified for the development of the Trichardtsfontein project, they have reference to the proposed consolidation.

Table 10 below provides a summary of these impacts, and whilst several of these were predicted to be first experienced during construction, they are likely to be felt throughout the course of operation, including the incorporation of the three Mining Right areas.

Predicted construction phase impacts included:

- Two positive impacts, namely job creation due to construction activities, and multiplier effects on the local economy; and
- Eight negative impacts, namely increase in spread of communicable diseases and social pathologies, increased pressure on local services/ resources and facilities,

establishment and growth of informal settlements, conflict/competition between newcomers and incumbent population, construction-related health and safety impacts, disruption of movement patterns, opposition because of perceived negative impacts, and potential financial implications for property developers.

Additional impacts that were identified during the operational phase of the Trichardtsfontein project are as follows:

- Three positive impacts, namely job creation due to operational activities, regional economic development and community development induced by LED and CSI; and
- Three negative impacts, namely economic dependency on the project, operational-related health and safety impacts, and potential subsidence induced impacts.

In terms of the closure and decommissioning impacts, the eventual termination of a mine's operating life is common, and socio-economic consequences are inevitable. It should be noted that predictions concerning the characteristics of the receiving socio-economic environment at the time of decommissioning are subject to a large margin of error, thus significantly reducing the accuracy of impact assessment. Several socio-economic impacts could arise when the mining operation is decommissioned and should therefore form part of the scope of study when the EIA for decommissioning of the mine is planned. Socio-economic issues that could be focussed on include:

- **Impacts on the workforce** – *psychological issues* (e.g. distraction from normal activities, with a potentially negative impact on performance and safety), and *personal and family income issues* (e.g. concerns about the effect of reduced income on family life);
- **Impacts on the local community** – *economic dependency* (e.g. if new jobs are created, but at remuneration levels lower than those in the mining industry, this might impact negatively on the local economy), *demographic changes* (e.g. migration of skilled workforce from the area); and *dependency on CSI initiatives* (e.g. financial support to local amenities may be withdrawn by the power plant);
- **Impacts on the wider community** - *the national and regional economy* (e.g. impact on the viability of other indigenous industries, such as Sasol, due to the loss of locally produced outputs), financing of decommissioning (e.g. adequate funds may not have been provided for decommissioning and site rehabilitation); and infrastructure (e.g. mining assistance with road and infrastructure maintenance); and
- **Impacts on government** - District/local governments will no longer receive tax and royalty payments.

As with several of the construction and operational phase impacts, decommissioning impacts can contribute to existing cumulative impacts, if closure of mining operations overlaps with other major mining or industrial operations in the secondary study area.

Table 10: Summary of impacts identified in the 2014 Trichardtsfontein SIA

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Consequence	Probability	Significance		Duration	Extent	Intensity	Consequence	Probability	Significance
Job creation during construction	Short term	Local	Very low - positive	Slightly beneficial	Probable	Negligible - positive	<ul style="list-style-type: none"> - Recruitment to be coordinated through the Department of Labour (DoL) - Promotion of female and youth employment - Effective implementation of training and skills development initiatives - Monitoring subcontractors in terms of local employment targets - Labour-intensive construction methods should be promoted 	Short term	Local	Moderately high - positive	Slightly beneficial	Highly probable	Minor - positive
Multiplier effects on the local economy	Project Life	Regional	Moderate - positive	Moderately beneficial	Probable	Minor - positive	<ul style="list-style-type: none"> - Give preference first to capable subcontractors located in the local municipal area - Establish linkages with other mining proponents in the area involved in skills and Small Medium and Micro Enterprises (SMMEs) development - Align skills development to build capacity of SMMEs 	Project Life	Local	Very high - positive	Highly beneficial	Highly probable	Moderate - positive
Increase in spread of communicable diseases and social pathologies	Beyond project life	Local	Very high - negative	Highly detrimental	Highly probable	Moderate - negative	<ul style="list-style-type: none"> - Extensive Human Immunodeficiency Virus/ Acquired Immune Deficiency Syndrome (HIV/ AIDS) awareness and general health campaign - Cease construction activities before nightfall - Clear identification of workers; prevention of loitering - Liaison with police, community policing forum - Influx management 	Beyond project life	Local	Low - negative	Moderately detrimental	Probable	Minor - negative
Increased pressure on local services/ resources	Project Life	Regional	Very high - negative	Highly detrimental	Highly probable	Moderate - negative	<ul style="list-style-type: none"> - Liaison with district and local municipalities well in advance to ensure needs are met - Ensure that municipalities take into account expected population influx - Promotion of mining methods to allow 	Medium term	Local	Low - negative	Slightly detrimental	Probable	Negligible - negative

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Consequence	Probability	Significance		Duration	Extent	Intensity	Consequence	Probability	Significance
							for surface development - Liaison with housing developers to address housing need - Influx management						
Establishment and growth of informal settlements	Project Life	Regional	Very high - negative	Highly detrimental	Likely	Moderate - negative	-Mitigation measures recommended in Section 6.2.4 to discourage influx - Promote projects providing housing, especially low cost housing	Medium term	Local	Moderate - negative	Slightly detrimental	Probable	Minor - negative
Conflict/ competition between newcomers and incumbent population	Medium term	Limited	High - negative	Moderately detrimental	Probable	Minor - negative	-Measures to mitigate population influx and local recruitment (See Sections 4.2.1 and 4.2.4)	Medium term	Limited	Very low - negative	Slightly detrimental	Unlikely	Negligible - negative
Construction-related health and safety impacts	Short term	Limited	High - negative	Slightly detrimental	Probable	Minor - negative	-Traffic control - Road maintenance - Regulation of traffic at intersection of haul road at N17 and other roads - Community education	Short term	Very limited	Very low - negative	Negligible	Probable	Negligible - negative
Disruption of daily movement patterns	Project Life	Limited	Moderately high - negative	Moderately detrimental	Probable	Minor - negative	-Measures to alleviate traffic problems suggested Section 4.2.9	Medium term	Limited	Low - negative	Slightly detrimental	Probable	Negligible - negative
Opposition because of perceived negative impacts	Project Life	Local	Very high - negative	Highly detrimental	Highly probable	Moderate - negative	- Communicate commitments regarding Local Economic Development (LED) - Transparency regarding employment practices - Presentation of Environmental Impact Assessment (EIA) findings in clear and understandable manner	Project Life	Local	Low - positive	Moderately beneficial	Probable	Minor - positive
Job creation during operation	Project Life	Regional	Moderate - positive	Moderately beneficial	Probable	Minor - positive	- As for construction phase - Section 4.2.1	Project Life	Regional	Very high - positive	Highly beneficial	Highly probable	Moderate - positive
Regional economic development	Long term	Regional	Very low - positive	Slightly beneficial	Unlikely	Negligible - positive	-Measures recommended to maximise benefits from local employment, economic multiplier effects, as well as community, economic and skills development	Beyond project life	Regional	High - positive	Highly beneficial	Probable	Minor - positive

Impact	Pre-mitigation:						Recommended mitigation	Post-mitigation:					
	Duration	Extent	Intensity	Consequence	Probability	Significance		Duration	Extent	Intensity	Consequence	Probability	Significance
Community development induced by LED and CSI	Long term	Local	Very low - positive	Slightly beneficial	Probable	Negligible - positive	-Assuring stakeholder buy-in and participation - Aligning LED and Corporate Social Investment (CSI) initiatives with those of other development role-players	Beyond project life	Local	High - positive	Highly beneficial	Highly probable	Moderate - positive
Dependency on mine for sustaining local economy	Long term	Local	Very high - negative	Moderately detrimental	Certain	Moderate - negative	- Develop turnaround or redeployment strategies - Publicise to mines in the industry that excess skills are available - Implement actions, suggested by the Department of Labour - Equip the affected employees as well as members of the community with portable skills - Support economic diversification through development of alternative markets	Long term	Local	Low - negative	Slightly detrimental	Probable	Minor - negative
Operation-related health and safety impacts	Long term	Limited	High - negative	Moderately detrimental	Highly probable	Minor - negative	- Plant maintenance - Rigorous health and safety programmes	Long term	Limited	Very low - negative	Slightly detrimental	Unlikely	Negligible - negative
Potential Financial implication for town developers	Beyond project life	Limited	Very high - negative	Highly detrimental	Highly probable	Moderate - negative	- Using mining methods that will eliminate subsidence and allow for surface development -Public awareness campaigns regarding subsidence -Investment in development to secure housing options for employees, and thereby reassuring public	Medium term	Limited	Low - negative	Slightly detrimental	Unlikely	Negligible - negative
Potential subsidence related impacts	Long term	Limited	High - negative	Moderately detrimental	Highly unlikely	Negligible - negative	- Because this impact is extremely unlikely to occur, no mitigation measures are applicable.	Long term	Limited	High - negative	Moderately detrimental	Highly unlikely	Negligible - negative

5.3 Impacts Associated with the Proposed Consolidation Areas - 2017

This section describes the likely changes to the description and significance of impacts identified and rated as part of the 2014 SIA. These changes will be brought about by the inclusion of the Vaalkop Mining Right area, into the consolidated project.

As construction activities for the TCTS has been completed, and there is limited construction associated with Trichardtsfontein and Vaalkop; with the exception of the installation of the vent shafts; impacts presented below address the changes to operational activities only.

It is worth noting that impacts such as job-creation, as identified during the Trichardtsfontein SIA, is not applicable here, as the new applicant has indicated that existing employees will be utilised for mining activities through the consolidation of the three Mining Right areas.

5.3.1 Sustained employment during operation

5.3.1.1 Impact description

The consolidation of the three Mining Right areas, as proposed by Sasol, will utilise the existing workforce to mine the Trichardtsfontein and Vaalkop areas, once mining at TCTS is complete. This phased approach to the consolidated project (ie mining Trichardtsfontein and then Vaalkop) will provide continuous employment opportunities for the current workforce.

The proposed life of mine at the Trichardtsfontein operation is estimated at 17 years, whilst the mining of the Vaalkop area will only begin in 2032. This extended operational period can have a major, long term, positive impact for employees and their dependents. A large proportion of the mine's permanent operational workforce is sourced from the local labour sending area, which is defined as communities within the GMLM. As noted in Section 2.4.1, the current TCTS workforce (1 221 people). The proposed continuous mining into Trichardtsfontein and Vaalkop will likely see existing employees retiring, opening opportunities for replacement employees. The proposed training programmes presented in the SLP increases the opportunity for local communities to take advantage of such opportunities. It is, however recognised, that some positions will require scarce skills, which will not be readily available in the labour sending area and may be recruited from elsewhere in the GSDM or Country.

The operational phase of the consolidated mining operation will likely give rise to indirect employment opportunities. These could include jobs in the informal sector (for instance, in terms of food stalls for the convenience of workers), and in the formal sector (for instance, by sourcing goods and service from enterprises in the local municipal area where possible).

5.3.1.2 Recommended mitigation measures

Given that communities in the vicinity of the mine will be most affected by the project, it is consistent with national legislation (such as guidelines set out by the Mining Charter and MPDRA) that they should be given special consideration in terms of the benefits arising from the project. To enhance the benefits of employment creation for these communities, it is recommended that the following measures be implemented:

- Recruitment for any unintended vacancies be coordinated through the local Department of Labour (DoL) rather than on site to ensure that employment practices comply with Sasol's local recruitment policy;
- Where feasible, promote the creation of employment opportunities for women and youth, above the targets set out in the Mining Charter. The performance indicator for the promotion of employment of women and youth would be the number of local women and persons under the age of 35 who are employed throughout the operational phase of the project;
- Establish a monitoring system to ensure that the subcontractors honour the specified local employment policy;
- If required, the local resident status of applicants should be verified in consultation with community representatives and local government;
- Ensure that existing employees have access to pertinent skills training and are able to improve their professional proficiencies throughout their employment with Sasol. This will assist with self-improvement and provide an opportunity for employees to achieve professional goals.

In addition, it is recommended that local employment opportunities that may arise be maximised as far as possible, by intensifying efforts in the SLP, which are aimed at developing scarce skills.

5.3.1.3 Impact rating

IMPACT DESCRIPTION: Job creation during operation				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
PRE-MITIGATION				
Duration	Project Life (5)	Life of mine will be extend into the mining of Trichardtsfontein and Vaalkop (stating in 2032)	Consequence: Moderately beneficial (12)	Significance: Minor - positive (52)
Extent	Regional (4)	A considerable number of positions are filled by persons living in the local municipal area; and some from elsewhere in the district		
Intensity x type of impact	Moderately high - positive (4)	No new jobs will be created, however, current employees will benefit from the extended operating life.		
Probability	Probable (4)	Current workers (based on institutional knowledge) would remain employed by Sasol. Similarly, there is no proposed downscaling during mining at Vaalkop.		
MITIGATION:				
<ul style="list-style-type: none"> - Recruitment for new positions/replacements to be coordinated through the DoL - Promotion of female and youth employment - Effective implementation of training and skills development initiatives - Monitoring subcontractors in terms of local employment targets 				
POST-MITIGATION				
Duration	Project Life (5)	As for pre-mitigation	Consequence: Highly beneficial (15)	Significance: Moderate - positive (75)
Extent	Regional (4)	As for pre-mitigation		
Intensity x type of impact	Very high - positive (6)	Mitigation will maximise local job creation for unintended/unplanned positions.		
Probability	Likely (5)	Mitigation will maximise probability that local recruitment targets are achieved and local benefits optimised		

5.3.2 Conflict / competition between newcomers and incumbent population

5.3.2.1 Impact description

As described in the SIA completed for Trichardtsfontein, a proportion of the mine workforce were sourced from within the local (primary) study area, while others (mostly semi and highly skilled) have been sourced from elsewhere in the province and within the rest out South Africa. As with any mining operation in South Africa, there exists an inherent risk of conflict between the mining company and the surrounding host communities. It is therefore feasible to consider the likelihood that *conflict* might arise, particularly around the allocation of employment and associated opportunities. One possible reason for such conflict would be the perception among locals that “outsiders” are taking up jobs that could have gone to unemployed members of the local community. As per the findings of the field investigations in 2014, stakeholders indicated that the local population have in the past reacted negatively (and even violently) towards migrants (e.g. cases of xenophobia have been recorded in areas such as Embalenhle).

The fact that the current operations at TCTS and Trichardtsfontein have not experienced significant conflict or protest, indicates that the current engagement, employment and procurement practices are effective; however, it does not reduce the severity of the impact.

5.3.2.2 Recommended mitigation measures

Given that communities in the vicinity of the mine will be most affected by the project, it is consistent with national legislation (such as guidelines set out by the Mining Charter and MPDRA) that they should be given special consideration in terms of the benefits arising from the project. To enhance the benefits of employment creation, including any piecemeal work that may be required, for these communities, it is recommended that the following measures be implemented:

- Recruitment be coordinated through the local Department of Labour (DoL) rather than on site to ensure that employment practices comply with Sasols local recruitment policy;
- Promote the creation of work opportunities for women and youth, above the targets set out in the Mining Charter. The positions reserved for the youth and women may only be filled with persons outside of these categories if it can be demonstrated that no suitable persons are available to fill these positions. The performance indicator for the promotion of employment of women and youth would be the number of local women and persons under the age of 35 who are employed in the construction phase of the project;
- Establish a monitoring system to ensure that the subcontractors honour the specified local employment policy;
- If required, the local resident status of applicants should be verified in consultation with community representatives; and
- Where possible, maximise the extent of short-term employment (over and above the full time employees and contractors) through piecemeal work and the like.

5.3.2.3 Impact rating

IMPACT DESCRIPTION: Conflict/ competition between newcomers and incumbent population				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
PRE-MITIGATION				
Duration	Project Life(5)	Will be experience throughout the operational phase	Consequence: Moderately detrimental (-12)	Significance: Minor - negative (-48)
Extent	Limited (2)	Will mostly affect surrounding rural communities		
Intensity x type of impact	High - negative (-5)	High unemployment in the rural areas is likely to engender intense competition for jobs, as is evident in past protest activity, and incidences of xenophobia		
Probability	Probable (4)	Highly probable that some workers would have to be recruited from elsewhere and that locals will feel overseen, due to low local skill levels and only 40% local recruitment requirement		
MITIGATION:				
-Recruitment to be coordinated through the DoL - Promotion of female and youth employment - Effective implementation of training and skills development initiatives - Monitoring subcontractors in terms of local employment targets - Where possible, maximise the extent of short-term employment (over and above the full time employees and contractors) through piecemeal work and the like				
POST-MITIGATION				
Duration	Project Life(5)	Will be experience throughout the operational phase	Consequence: Slightly detrimental (-8)	Significance: Negligible - negative (-24)
Extent	Limited (2)	As for pre-mitigation		
Intensity x type of impact	Very low - negative (-1)	Stringent enforcement of preferential local employment policy may reduce influx of jobseekers		
Probability	Unlikely (3)	Verification of workers as locals will reduce probability of outsiders fraudulently gaining positions		

5.3.3 Potential financial implications for property developers

5.3.3.1 Impact description

The Trichardtsfontein SIA highlighted the fact that the proposed mining may result in negative financial impacts for residential developers, specifically in proximity to the active mining areas. Currently several residential developments are planned on the surface area overlapping with the proposed underground mine for Trichardtsfontein. It is unknown if similar developments have been planned around the Vaalkop mining area.

During the 2014 field investigations it was confirmed that the companies and landowners driving these developments, have invested large amount of funds. The proposed extension of mining operations into Vaalkop will further increase the likelihood that residential development in the area will be sought-after. Similarly, the change in mining method to high extraction mining, increases the risk for surface subsidence, and reduces the attractiveness to potential buyers of residential development.



In the case that township developments are approved, thus requiring co-existence with the underground mine, it will be unlikely that the development will reach its full potential value, as lower values might be attributed by the buying public to stands or houses built on an undermined area. This will mostly stem from distorted public perception.

5.3.3.2 Recommended mitigation measures

- The proponent could consider negotiating terms with the relevant town developers, which can allow housing development and mining to co-exist; for instance during these negotiations building specifications could be proposed by mine engineers that will allow for development that will eliminate the effect of subsidence;
- Public awareness campaigns could be launched to inform the buying public of the risks associated with residing near an operating mine that adopts a bord-and-pillar,, high extraction mining method;
- To change public perceptions, the proponent could consider investing in these housing developments as housing options for their employees, thereby assuring the public of the surety in investment;

In the event that subsidence causes impacts on housing developments (based on empirical evidence), the proponent should commit to appropriate compensation..

5.3.3.3 Impact rating

IMPACT DESCRIPTION: Potential Financial implication for town developers				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
PRE-MITIGATION				
Duration	Beyond project life (6)	Public perception can outlast project life	Consequence: Highly detrimental (-14)	Significance: Minor - negative (-70)
Extent	Limited (2)	Will be restricted to properties which are undermined		
Intensity x type of impact	Very high - negative (-6)	Huge financial cost are at stake if developments are stopped		
Probability	Likely (5)	Public perception regarding undermined areas are already evident , when one considers the resistance put up by landowners to undermining proposed townships		
MITIGATION:				
- Using mining methods that will eliminate subsidence and allow for surface development - Public awareness campaigns regarding subsidence - Investment in development to secure housing options for employees, and thereby reassuring public				
POST-MITIGATION				
Duration	Medium term (3)	Mitigation will ultimately succeed in changing public perception	Consequence: Slightly detrimental (-9)	Significance: Minor - negative (-36)
Extent	Limited (2)	As for pre-mitigation		
Intensity x type of impact	Moderately high-negative (-4)	Mining methods can will result in stooping on surface		
Probability	Probable (4)	Mitigation will decrease the likelihood that subsidence and public perception will affect property values		

5.3.4 Community development induced by LED and CSI

5.3.4.1 Impact description

The Trichardtsfontein SLP includes plans for LED, CSI and skills development, with local communities being the major benefactors (Xstrata SA Coal, 2012).

The proposed consolidation of the three Mining Right areas will require a similar consolidation of the various SLPs associated with each Mining Right. This in itself will open up the opportunity for a more widely spread distribution of project benefits, through LED and CSI initiatives. Whilst it is unknown at this stage to what degree the SLPs will be incorporated into a single “operation”, the opportunity exists to derive increased social and economic benefit.

The effective implementation of the SLPs has the potential to facilitate and catalyse socio-economic development within the project affected communities, as several of these communities (e.g. Holfontein informal township, Kinross, Evander and people residing in rural communities) have a relatively low socio-economic base. These initiatives – especially if implemented in consultation with those of other developmental role-players (such as government, other mines, the petrochemical sector and development organisations) – can create an increased contribution towards socio-economic development, sustainable jobs and income stability within the study area. For instance, the Trichardtsfontein SLP makes provisions for a total of R 11.8 million to LED and R 13.8 million for skills and human resource development projects over the initial 5 year period.

Successful consolidation and implementation of the SLPs will contribute to maximising the benefits of the proposed project for Trichardt and surrounding communities, as well as towards counteracting any negative impacts that these communities may experience as a result of the projects operations. It is also recognised that, unless LED projects are designed to be sustainable beyond the life of the mine, they can also have negative long-term impacts by increasing economic dependency on the mine.

5.3.4.2 Recommended mitigation measures

To maximise this positive impact, the following measures are recommended:

- The details of Sasols’ proposed LED programmes must be designed and implemented in consultation with both community representatives and municipal management to ensure that the actual needs of communities are met;
- In addition to the development initiatives described in the SLP, Sasol must investigate the feasibility of implementing additional development projects, benefitting a wider audience than those described above, under the auspices of Corporate Social Responsibility (CSR). The identification of such initiatives must (as above) occur in consultation with both the local municipality and the affected communities, and care should be taken to ensure adequate involvement of women and the youth in this consultation process.



- In this regard Sasol must consider conducting a needs assessment to determine the types of additional investments it can make to local development. The implementation of CSR initiatives will not only serve to further develop the local area, but will enhance Sasol's social license and minimise potential mobilisation against the project (see Section 5.3.1 and 6.3); and
- It is recommended that Sasol's department responsible for any CSI or community development, contact the CSI and socio-economic development departments of other mines and relevant NGOs in the area, in order to gauge whether they can align or synergise with any of their efforts to collaborate in existing (sustainable) development initiatives that are underway or already planned.

5.3.4.3 Impact rating

IMPACT DESCRIPTION: Community development induced by LED and CSI				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
PRE-MITIGATION				
Duration	Project Life (5)	LED and CSI activities are planned for the life of mine	Consequence: Slightly beneficial (8)	Significance: Negligible - positive (32)
Extent	Local (3)	Will be beneficial to communities in the primary and local study area		
Intensity x type of impact	Very low - positive (1)	Rural community currently experiences high poverty and low literacy levels; without targeted implementation of programmes these communities won't optimally benefit		
Probability	Probable (4)	Without adequate stakeholder involvement, LED and CSI projects are unlikely to be on target and sustainable		
MITIGATION:				
<ul style="list-style-type: none"> - Assuring stakeholder buy-in and participation - Aligning LED and CSI initiatives with those of other development role-players 				
POST-MITIGATION				
Duration	Beyond project life (6)	If sustainably managed and effectively marketed, development benefits should extend beyond the life of the mine	Consequence: Highly beneficial (14)	Significance: Moderate - positive (84)
Extent	Local (3)	As for pre-mitigation		
Intensity x type of impact	High - positive (5)	Recommended measures will enhance stakeholder involvement and increase effectiveness of programmes, increasing the intensity considerably		
Probability	Highly probable (6)	Recommended measures will improve likelihood of benefits reaching those with a low socio-economic base.		

5.3.5 Potential subsidence induced impacts

5.3.5.1 Impact description

Underground mining resulting in surface subsidence, has the potential to impact negatively on pre-existing surface land uses. In mechanised bord-and-pillar mining, extraction is

achieved by developing a series of roadways (bords) in the coal seam connected by splits (cut-throughs) to form pillars. In high extraction mining, all the pillars are extracted to allow the roof to collapse in a controlled manner (Stooping).

Although it is proposed that stooping will occur outside of the 1:100 floodlines and developed areas, the change in mining method (i.e. high extraction mining) increases the risks associated with surface subsidence. The nature of this risk to development areas will be better quantified through geotechnical investigations.

Within the context of this study, any instances of surface subsidence that may occur throughout operations (and following closure) can impact on:

- Business and residential structures, by either damaging or reducing the structural integrity of buildings, which could potentially displace residents and farmworker residing on affected properties;
- Transport infrastructure such as railways, roads and power lines in a similar fashion;
- Surface contours on agricultural land, by changing water flow and damming patterns on land, which can have negative effect on commercial farming; and
- Land value, as land rendered vulnerable to subsidence will likely be perceived less valuable and less attractive.

It should be noted that from a technical point of view, the project, through the inclusion of high extraction mining, is unlikely to result in property damage. However, high extraction mining will inherently increase the risk of some form of subsidence; in that if it does occur, will affect surface land uses. For the purposes of this assessment, however, motivated by the limited human settlement on the proposed mining areas, the risk is deemed to be of such that any displacement and consequential resettlement impacts are unlikely to manifest.

Although subsidence was investigated in rock engineering specialist study in 2012, this was done with the assumption that bord-and-pillar mining would take place. However, public perception with regard to subsidence might be different, these perceptions, can still ultimately result in a devaluation of land.

5.3.5.2 Recommended mitigation measures

Because this impact is largely reliant on the findings of a professional geotechnical study, no socio-economic mitigation measures are applicable.

The only exception that may apply, is to ensure regular communication with stakeholders, including community members, surrounding property developers, business operators etc., to communicate the risk levels for surface subsidence.

Any unintended damage (based on empirical data) and/or losses that are incurred by impacted parties must be addressed on a case-by-case basis, in accordance with South African law.



5.3.5.3 Impact rating

IMPACT DESCRIPTION: Potential subsidence related impacts				
Predicted for project phase:	Pre-construction	Construction	Operation	Decommissioning
Dimension	Rating	Motivation		
PRE-MITIGATION				
Duration	Project Life(5)	Subsidence can usually occur for an extended period of time	Consequence: Moderately detrimental (-12)	Significance: Negligible - negative (-24)
Extent	Limited (2)	Will affect land uses in project footprint		
Intensity x type of impact	High - negative (-5)	Subsidence may lead to considerable negative impacts, if this occurs.		
Probability	Unlikely (2)	Several specialist studies found that subsidence is unlikely, but the risk is higher than standard bord-and-pillar mining		
MITIGATION: Ensure regular communication with stakeholders, including community members, surrounding property developers, business operators etc., to communicate the risk levels for surface subsidence. Any unintended (factual) damage and/or losses that are incurred by impacted persons must be addressed on a case-by-case basis, in accordance with South African.				
POST-MITIGATION				
Duration	Project Life(5)	Subsidence can usually occur for an extended period of time	Consequence: Moderately detrimental (-12)	Significance: Negligible - negative (-24)
Extent	Limited (2)	As for pre-mitigation		
Intensity x type of impact	High - negative (-5)	As for pre-mitigation		
Probability	Unlikely (2)	As for pre-mitigation		

5.4 Cumulative Impacts

Cumulative impacts are defined as impacts arising from the combined effects of two or more projects or actions. The importance of identifying and assessing cumulative impacts stems from the fact that, in social as well as natural systems, the whole is often more than the sum of its parts – implying that the total effect of multiple stressors or change processes acting simultaneously on a system may be greater than the sum of their effects when acting in isolation. Cumulative impacts usually relate to large-scale and more extensive rather than primary concentrated impacts and have a tendency to increase the intensity of impacts already predicted for the proposed project.

The aim of this section is to highlight the nature of the cumulative socio-economic impacts that are expected to occur as result of the combined effect of the proposed project and other current or planned operations in the area (e.g. Syferfontein mine, Anglo Platinum’s Isibonelo Colliery, Eskom’s Kriel and Matla Power Stations, and Sasol’s plants). Three possible cumulative impacts were identified during the completion of the SIA for Trichardtsfontein, and are deemed applicable and relevant to the proposed consolidation of the Mining Right areas.

5.4.1 Multiplier effects on the local economy

The extended life of the current mining operations through the consolidation of the three mining areas will extend the time that active operational employment opportunities exist.

There are 1 221 people employed through the TCTS operations, with this employees complement expected to fulfil resourcing requirements in the mining of Vaalkop, once mining extends to that area. Several nearby mining and industrial operations also employ substantial numbers of people; other mines planned for the area such as Igoda Coal, will also potentially add to the number of people employed in the mining sector. The contribution of mining and coal related industries (e.g. Eskom Power Plants and Sasol's Petrochemical Plants) to job creation will therefore be enhanced through the proposed consolidation.

Secondly the proposed project, together with other existing and planned coal mining related operations will result in several economic benefits for local communities through direct and multiplier effects. These effects are usually stimulated by wage bills, local and regional procurement spend, and investment into LED and skills development. The current mining operations and proposed consolidation will add to the existing positive effect of mining on local economic development by applying national principles in terms of local employment and procurement, as well as LED.

5.4.2 Impacts related to population influx

The area has already experienced a significant influx of people in search of work at nearby industrial and coal mining operations. It is likely that this existing impact will continue to see an increase in population influx, exacerbated by the high unemployment rates in the country and the down-scaling and closure of other non-fossil fuel based mines.

Any additional people that migrate to the area will likely not be taken up through recruitment on the TCTS operations, as the current staff complement will not change. In this instance, influx is also likely to exacerbate pressures on existing social/community infrastructure and services, the growth or establishment of informal settlements and a negative impact on housing prices.

5.4.2.1 Increased pressure on local services and infrastructure

The capacity of service delivery infrastructure is under threat not only in Trichardt but also Secunda, Evander, Kinross and Embalenhle. Any additional influx of job-seekers into these areas, combined with the presence of an operational workforce and the influx already caused by coal mining and related industries, will place substantial pressure on local infrastructure such as roads, clinics, schools, sanitation and water access, and housing.

This impact also addresses the availability of schooling in the area. The impact on schooling is part of a cumulative effect, as the current and planned mining operations are contributing to increased rate of in-migration and the resultant pressure on schools.

Careful planning and discussions are required between neighbouring mines, local stakeholders and the local and district municipalities, in order to manage the effects of influx on social services.

5.4.2.2 Housing and Informal settlements

The influx of people as result of the project and other operations include those employed in the formal and informal sector, as well as job-seekers. Influx will place additional pressure on the already limited and expensive housing options in the area.

The main concerns are that:

- The low-income market is already too highly priced for the lower socio-economic group, their spending power is limited and this combined with influx of people due to the combination of the proposed project, existing coal mines, and the flourishing industrial sector will result in increased housing demand and pricing. Escalating prices will lead to an increase in the number of informal housing developments; as a larger proportion of communities, might find formal accommodation options to be expensive, which may force them to revert to informal settlements; and
- Those who cannot buy a house will rent, also exacerbating the existing shortage of houses for rent. Given that rental prices in towns like Trichardt and Secunda are already prohibitive for employees within the lower income brackets, they and the unemployed will seek properties in low-income areas. Consequently, there is likely to be an increase in demand for housing or informal stands in areas such as Embalenhle, Evander or informal settlements such as Holfontein.

The following recommendations are made to ensure that a sufficient number of houses are available for purchase and rent respectively:

- Town planning (i.e. integrated development planning) - Integrated and spatial development planning is a key principle that should be used to ensure that town planning pro-actively makes available serviced stands for property development, such developments should strongly consider low-cost housing;
- Zoning plans need to be drawn up to ensure that development is planned in an orderly fashion and that conflicting land uses are avoided or arbitrated with a mutually beneficial solution between developers and the mining proponent; and
- Private-public development partnerships – could be launched by government, developers, other influx contributors and the proponent as part of LED or CSI initiatives to provide or subsidise affordable housing for particularly the low-income group who will not be able to afford housing.

5.4.3 Dependency on mining to sustain the local economy

As mentioned earlier in this report, economic activities in the area are dominated by coal mining and industrial sector (i.e. Sasol), the latter also being dependant on mining. Because mining creates a much larger number of jobs than the services sector, and because mine workers tend to earn better salaries than those employed in most other sectors, it is fair to deduce that the local economy is heavily dependent on the mines or mining related industry (e.g. Sasol). As emphasised earlier, all mines have a finite lifespan. Inevitably, mining operations in the area will at some point in the future begin to scale down and close,

affecting all coal dependant industries (e.g. Sasol and nearby coal-fired power stations). Unless significant investment is made into economic diversification, the area is destined for a considerable economic slump once this process commences.

6 Potential social risks

The objective of this section is to identify any aspects of the receiving socio-economic environment that would represent significant risks to the proposed consolidation. These may constitute constraints that would have to be accommodated in project design, or issues that would require appropriate management and mitigation. Social risk is linked to a project's stakeholders and can either be a risk to a project as a result of the impact on stakeholders or stakeholders' impact on the project. In most cases a risk can be financial, delay or reputational.

- *Financial:* A financial risk can result in a project being financially unfeasible due to costs.
- *Delay:* could result in a delay to a project at any stage.
- *Reputational:* could cause damage to a company's reputation, which could result in delays or have financial implications.

The potential social risks, which the project might be exposed to, are discussed below.

6.1 Community employment expectations

Community expectations regarding the project are most frequently related to employment. When such hopes are not met with interventions or addressed with appropriated communication it may lead to potential stakeholder opposition and public mobilisation against the project.

In a context of high unemployment, local residents will be dissatisfied if access jobs and the provision of associated services is perceived to be biased and preferential. In other words, employment of locals is a sensitive issue and social mobilisation against the project as a result of perceived unfair practices can be a real threat to mining companies in the area. Similarly, during the undertaking of the SIA for the Trichardtsfontein project in 2014, the then applicant had indicated that 352 employees would be appointed once the mine reached full production. Any deviations (negatively) to this figure, without the requisite communication, may create feelings of mistrust in the current proponent. Similarly, any increases in this employment figure, as well as the plans to utilise the current workforce for the continued mining of the consolidated mining areas, would need to be communicated adequately, to ensure that any pre-existing expectations for employment are addressed and managed.

Current workforce has a large proportion from local labour sending areas. This continued approach, and in maintaining the same staff complement, will represent a considerable positive benefit for the project, because employment provides opportunities for local people to be trained and gain sector experience.

6.2 Social unrest and community opposition

The communities in the study area have in the past mobilised into protest action against other coal mines operating in the area. This indicates that volatile elements exist in the primary study area. For instance there was an incident of unrest where a group of community members protested due to the fact that not enough local recruitment took place for a mine.

It is possible that if expectations of the surrounding communities are not carefully managed that social discontent will reach consequential levels. It is essential that communication channels remain open between the communities and Sasol, so that stakeholders can lay complaints and discuss concerns with the project. In this regards it is recommended that the Sasol Community Liaison Officers (CLO) discuss engagement opportunities and potential improvements in grievance management. Furthermore stakeholder engagement and public participation should be on-going to manage expectations, allow for stakeholder input into the project, inform and educate stakeholders about the project, and allow for open discussions. This will assist in anticipating any potential social issues, which may be a risk to Sasol and to implement measures to avoid those risks.

It is possible that regardless of the Sasol's efforts for free, prior and informed consent there will still be stakeholders who are dissatisfied with the process. This potential for local instability should be taken into account together with the recent nationwide mining strikes, particularly in the mining sector.

When combining these dynamics it can be argued that affected communities might become resistant or hostile towards the proposed project, if not treated in a socially justifiable manner.

6.3 Failure to acquire a social licence to operate

Failure to avoid any of the aforementioned risks might detract from the Sasol's "*social licence to operate*." A social licence may be defined as the on-going approval and acceptance from a local community and stakeholders for a mine or project to operate. A social licence to operate is intangible and dynamic. It is granted by the communities, in which a mine operates and is rooted in stakeholder perceptions and opinions about the project. A social licence to operate is earned through on-going, transparent communications and mutual trust. It is therefore earned and needs to be maintained as opinions and perceptions can change. A social licence to operate is gained through free, prior informed consent from local communities and stakeholders. Gaining a social licence to operate for a mine can therefore be a critical factor a project's success and an important component to human rights.

Currently, negative impacts on landowners can possibly deteriorate the relationship between Sasol and the community. Attention should be given to resolve/prevent these impacts, to improve the proponent's standing in the local community. Without a social licence to operate a project may face a reputational risk through publicity and a delay risk if community dissatisfaction and protests that can result in a stop to prospecting or mining.

7 Conclusion and Recommendations

The consolidation of the Thubelisha, Trichardtsfontein and Vaalkop Mining Right Areas will have a similar effect on the social environment, as that identified during the undertaking of the 2014 SIA. The extended farm portions included in the Vaalkop Mining Right area, as well as the change from bord-and-pillar mining to high extraction mining have been identified as being the main drivers for a change in the description and significance of certain social impacts. These have been summarised in the table below.

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Table 11: Summary of impact ratings for the proposed consolidation

Code	Impact	Pre-mitigation:						Post-mitigation:					
		Duration	Extent	Intensity	Consequence	Probability	Significance	Duration	Extent	Intensity	Consequence	Probability	Significance
Employ	Sustained employment	Project Life	Municipal Area	Moderately high - positive	Moderately beneficial	Probable	Minor - positive	Project Life	Municipal Area	Very high - positive	Highly beneficial	Likely	Moderate - positive
Confl	Conflict and competition	Medium term	Limited	High - negative	Moderately detrimental	Probable	Minor - negative	Medium term	Limited	Very low - negative	Slightly detrimental	Unlikely	Negligible - negative
Property	Financial implications for property developers	Beyond project life	Limited	Very high - negative	Highly detrimental	Likely	Minor - negative	Medium term	Limited	Moderately high - negative	Slightly detrimental	Probable	Minor - negative
Com-dev	Community development - LED and CSI	Long term	Local	Very low - positive	Slightly beneficial	Probable	Negligible - positive	Beyond project life	Local	High - positive	Highly beneficial	Highly probable	Moderate - positive
Subsi	Potential subsidence induced impacts	Long term	Limited	High - negative	Moderately detrimental	Improbable	Negligible - negative	Long term	Limited	High - negative	Moderately detrimental	Improbable	Negligible - negative

7.1 Main conclusions regarding potential socio-economic impacts

The foregoing table shows that a total of five social impacts were assessed as part of this addendum report. These impacts must be read in conjunction with the 16 social impacts identified as part of the Trichardtsfontein SIA report completed in 2014.

If all mitigation measures are implemented according to the recommendations given in Section 5, and presented in the 2014 SIA report, it is anticipated that the consequence and/or probability of most negative impacts will be reduced, while positive impacts will on average be significantly enhanced to maximise benefits to surrounding communities.

7.2 Recommendations

This section provides recommendations with regard to the implementation of mitigation measures and other more general recommendations to aid the successful implementation of the proposed project.

7.2.1 Mitigation measures

In view of the above, it is strongly recommended that the mitigation measures described in Section 5 be incorporated into the consolidated Environmental Management Plan for the project and, where relevant, into the contract conditions for contractors and subcontractors. Measures must also be put in place to monitor and assess implementation of these mitigation measures and to take corrective action where necessary.

7.2.2 General recommendations

Throughout the SIA process, the specialist identified a number of issues that warrant consideration by the proponent. Firstly the risks identified in Section 6 above require particular attention and close monitoring and management. The extent of this monitoring will need to be re-assessed to ensure that the inclusion of social risks associated with the consolidation of the three Mining Right areas.

Secondly it is recommended that the proponent establish strong linkages with other institutions (e.g. government, NGOs, and other existing or planned mines) involved in local and regional economic development and social upliftment so as to maximise the benefits of its contribution to the welfare of local communities. Opportunities for linkages and synergies include:

- LED projects listed in future IDPs of GMLM or GSDM;
- Combining LED initiatives and budgets contained within the SLPs of the three Mining Right areas;
- LED initiatives by existing and planned mines in the area; and
- LED related activities of civil society and non-governmental organisations.

At the time of writing this updated report, comprehensive information regarding the initiatives of these institutions in the vicinity of the local study area were not available. It is suggested

that Sasol's CSI department should contact the CSI and socio-economic development departments of these institutions to gauge whether they can align or synergize with any of their efforts to collaborate in some of the development initiatives planned for the area.

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Addendum to the Trichardtsfontein Social **Impact Assessment Report**

Environmental Regulatory Processes relating to the Thubelisha, Trichardtsfontein and Vaalkop
Mining Right Areas

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