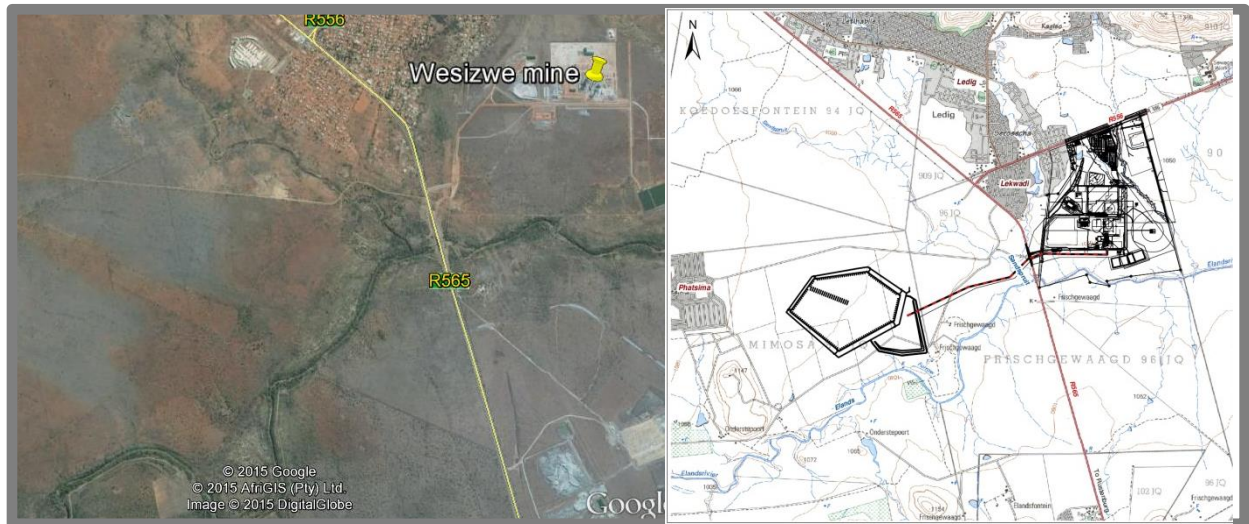


Kerryn Desai
Social Consultant
e kerryn@34degssouth.com

SOCIO-ECONOMIC IMPACT ASSESSMENT

Proposed Amendment to the Bakubung Platinum Mine

FINAL REPORT



Prepared by

Kerryn McKune Desai & Liza van der Merwe

March 2016

TABLE OF CONTENTS

TABLE OF CONTENTS.....	2
LIST OF FIGURES, TABLES AND BOXES	4
ACRONYMS	5
1 INTRODUCTION	6
1.1 Overview	6
1.1.1 Project Location.....	6
1.2 Terms of Reference.....	10
1.3 Method.....	10
1.4 Assumptions and Limitations.....	12
1.5 Report Structure.....	13
2 PROJECT OVERVIEW AND AREA OF INFLUENCE	14
2.1 Project Overview	14
2.1.1 Fit with Planning	14
2.2 Area of Influence	15
3 SOCIAL AND ECONOMIC ENVIRONMENT	16
3.1 Overview	16
3.2 Administration	16
3.2.1 The Political Structures of Governance	16
3.2.2 Traditional Authority	16
3.3 Population.....	18
3.4 Education	19
3.5 Economic Profile.....	20
3.5.1 Local Economy.....	21
3.5.2 Employment	25
3.5.3 Income and Dependency	27

3.6	Land Use	29
3.7	Health	31
3.8	Infrastructure and Services.....	31
4	IMPACT ASSESSMENT AND PROPOSED MITIGATION	34
4.1	Introduction	34
4.1.1	Potential Impacts Identified for the Project	34
4.2	Socio-economic Impacts, Assessment and Mitigation	35
4.2.1	Local employment and Skills Development	35
4.2.2	Benefits for the Local Economy	38
4.2.3	Increased Social Ills Linked to Influx of Workers and Job-Seekers	42
4.2.4	Increased Pressure on Infrastructure and Services.....	42
4.2.5	Increased Nuisance Factors	43
4.2.6	Disruption of Livelihood Activities.....	46
4.2.7	Cumulative Impacts.....	52
5	CONCLUSION.....	53
6	REFERENCES	56
6.1	Interviews.....	56
7	ANNEX A: SPECIALIST DETAILS AND DECLARATION OF INDEPENDENCE .	57
7.1	Primary Author: Kerryn McKune Desai	57
7.1.1	Declaration of Independence	57
7.2	Reviewer: Liza van der Merwe	58
8	ANNEX B: IMPACT ASSESSMENT METHODOLOGY.....	59
8.1	Determination of Significance of Impacts	59
8.2	Impact Rating System.....	59

LIST OF FIGURES, TABLES AND BOXES

Figure 1-1	Proposed infrastructure layout.....	7
Figure 1-2	Project location 1	8
Figure 1-3	Project location 2	9
Figure 3-1	Bakubung baRatheo leadership hierarchy.....	17
Figure 3-2	Overview of economic sectors	22
Figure 3-3	Growth pattern in the mining sector, 1997-2010	23
Figure 3-4	Occupation vs. level of education	26
Figure 3-5	Industry vs. individual monthly income	28
Figure 3-6	Average annual household income.....	29
Figure 3-7	Land use map	30
Figure 4-1	Tailings pipeline route over affected farm portions	48
Table 1-1	EIA Regulation requirements for Specialist Reports	11
Table 3-1	Age composition in the Project area.....	19
Table 3-2	Racial composition in the Project area	19
Table 3-3	Levels of education for population aged 20 years and above	20
Table 3-4	Key economic activities in the affected municipalities.....	22
Table 3-5	Bojanala DM employment contribution by sector in 2013	25
Table 3-6	Average annual household income.....	28
Table 3-7	Household access to basic infrastructure and services.....	32
Table 4-1	Construction Impact: Employment and Skills Development.....	36
Table 4-2	Construction Impact: Local Economy	39
Table 4-3	Operation Impact: Local Economy	40
Table 4-4	Construction Impact: Increased nuisance factors	44
Table 4-5	Operation Impact: Increased nuisance factors	45
Table 4-7	Construction Impact: Disruption of livelihood activities	48
Table 4-8	Operation Impact: Disruption of livelihood activities	49
Table 5-1	Pre-mitigation assessment summary	54
Table 5-2	Post-mitigation assessment summary	55
Table 7-1	Criteria for assessing impacts.....	59
Box 1-1	Terms of reference for the Social Impact Assessment	10
Box 4-1	Socio-economic Impacts	34

ACRONYMS

Acronyms	
AoI	Area of Influence
BDM	Bojanala Platinum District Municipality
BPM	Bakubung Platinum Mine
DEA	Department of Environmental Affairs
DM	District Municipality
DMR	Department of Mineral Resources
EMP	Environmental Management Programme
EPCM	Engineering, Procurement, and Construction Manager
GDP-R	Regional Gross Domestic Product
GVA	Gross Value Added
EIA	Environmental Impact Assessment
EMPR	Environmental Management Programme Report
IDP	Integrated Development Plan
LED	Local Economic Development
LM	Local Municipality
LoM	Life of Mine
MKLM	Moses Kotane Local Municipality
MPRDA	Mineral and Petroleum Resources Development Act 28 of 2002
NEMA	National Environmental Management Act 107 of 1998, as amended
RLM	Rustenburg Local Municipality
SIA	Socio-economic Impact Assessment
SLR	SLR Consulting (Africa) (Pty) Ltd
SMME	Small medium and micro-sized enterprises
ToR	Terms of Reference
TSF	Tailings Storage Facility
WPL	Wesizwe Platinum Limited

1 INTRODUCTION

1.1 Overview

In 2008, Wesizwe Platinum Limited (WPL) undertook an Environmental Impact Assessment (EIA) for the development of the Bakubung Platinum Mine (BPM). The Bakubung Platinum Mine received Environmental Authorisation in 2008, in terms of the National Environmental Management Act (Act 107 of 1998) (NEMA) and Mineral and Petroleum Resources Development Act (Act 28 of 2002) (MPRDA). An extensive and detailed Social Impact Assessment was prepared by Perisseuo Consulting cc. as part of the original EIA.

Construction of the mine and its support infrastructure has commenced in terms of the original application. Wesizwe are now proposing to make several amendments to the approved mine and the proposed amendments will require additional Environmental Authorisations (EA).

This Social Impact Assessment (SIA) assesses the potential socio-economic impacts associated with the additional Project infrastructure on the already authorised Bakubung Platinum Mine; refer to Section 2.1 for more detail about the Project.

Figure 1-3 Project location 2



shows the proposed infrastructure layout of the Project.

Given that a comprehensive EIA and SIA have been completed for the project, this report provides a brief description of the social and economic environment in which the proposed Project is located (a detailed socio-economic baseline description was provided as part of the original authorisation), and identifies potential impacts associated with the new activities on the already authorised Bakubung Platinum Mine site.

1.1.1 Project Location

Bakubung Platinum Mine is located on farms Frischgewaagd 96 JQ (Portions 3, 4 and 11), Ledig 909JQ, and Mimosa 81JQ, near Ledig. The Project straddles the Rustenburg Local Municipality (RLM) and Moses Kotane Local Municipalities (MKLM) in the Bojanala Platinum District Municipality (BDM), North West Province (see

Figure 1-1 Proposed infrastructure layout

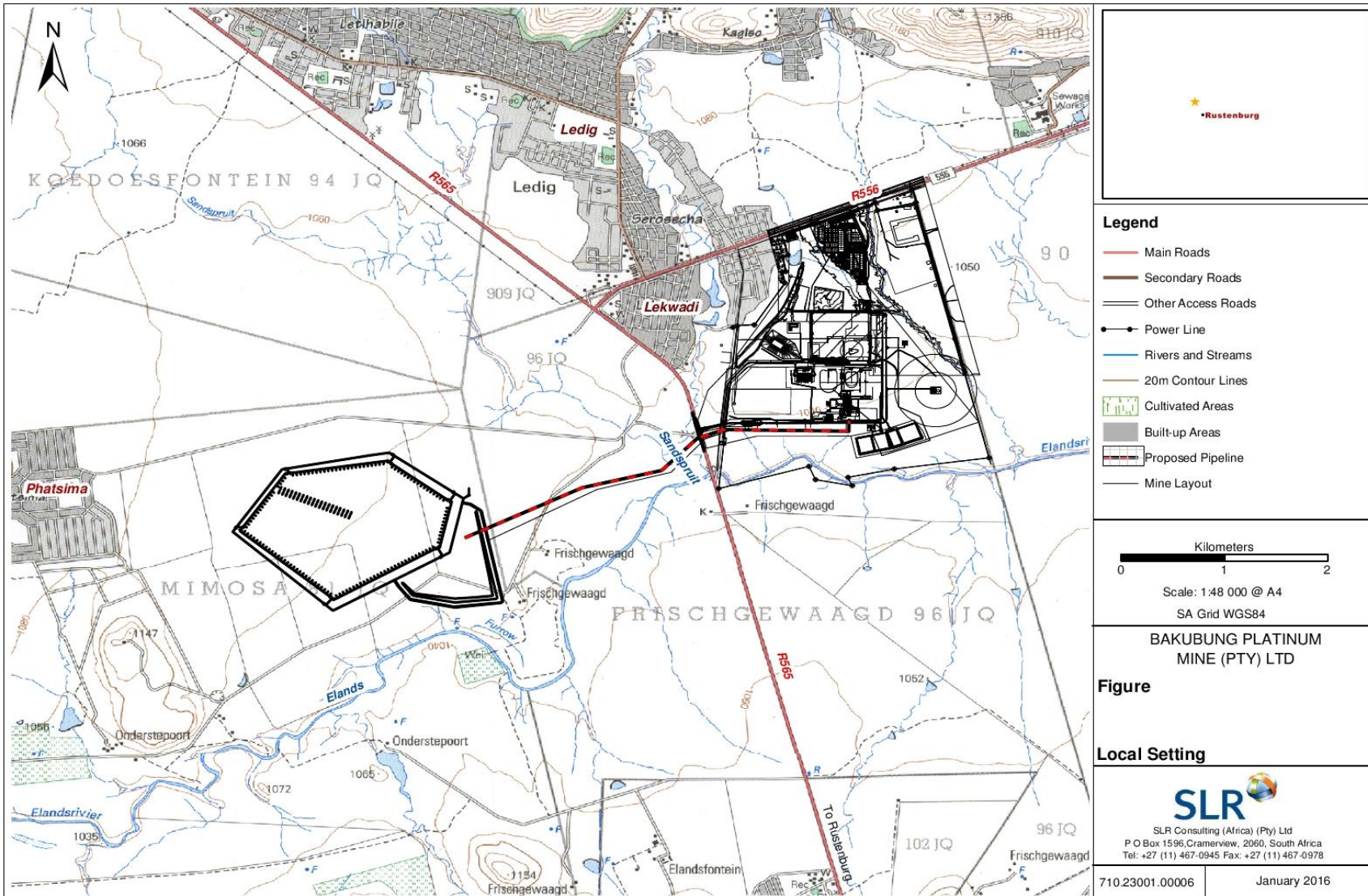


Figure 1-2 and **Figure 1-3**). The settlements of Ledig and Phatsima are located in close proximity to the proposed site; Ledig is located along the north-west fence line of the mine and Phatsima lies along the western fence line of the Tailings Storage Facility (TSF). Other settlements that lie in close proximity to the Project site are Chaneng (~3 km), Frischgewaagd (~4 km), and Boshhoek (~9 km). The closest large towns are Rustenburg (~35 km), Brits (~75 km), and Thabazimbi (~90 km away in Limpopo Province) as well as the Pilanesberg National Park and Sun City lie approximately 2 km north east of the Project.

SLR Consulting (Africa) (Pty) Ltd (SLR) was appointed by WPL as the lead consultant to undertake the Environmental Impact Assessment (EIA). Kerryn McKune Desai was appointed by SLR to conduct the Social Impact Assessment (specialist details and declaration of independence are provided in *Annex A*).

Figure 1-1 Proposed infrastructure layout

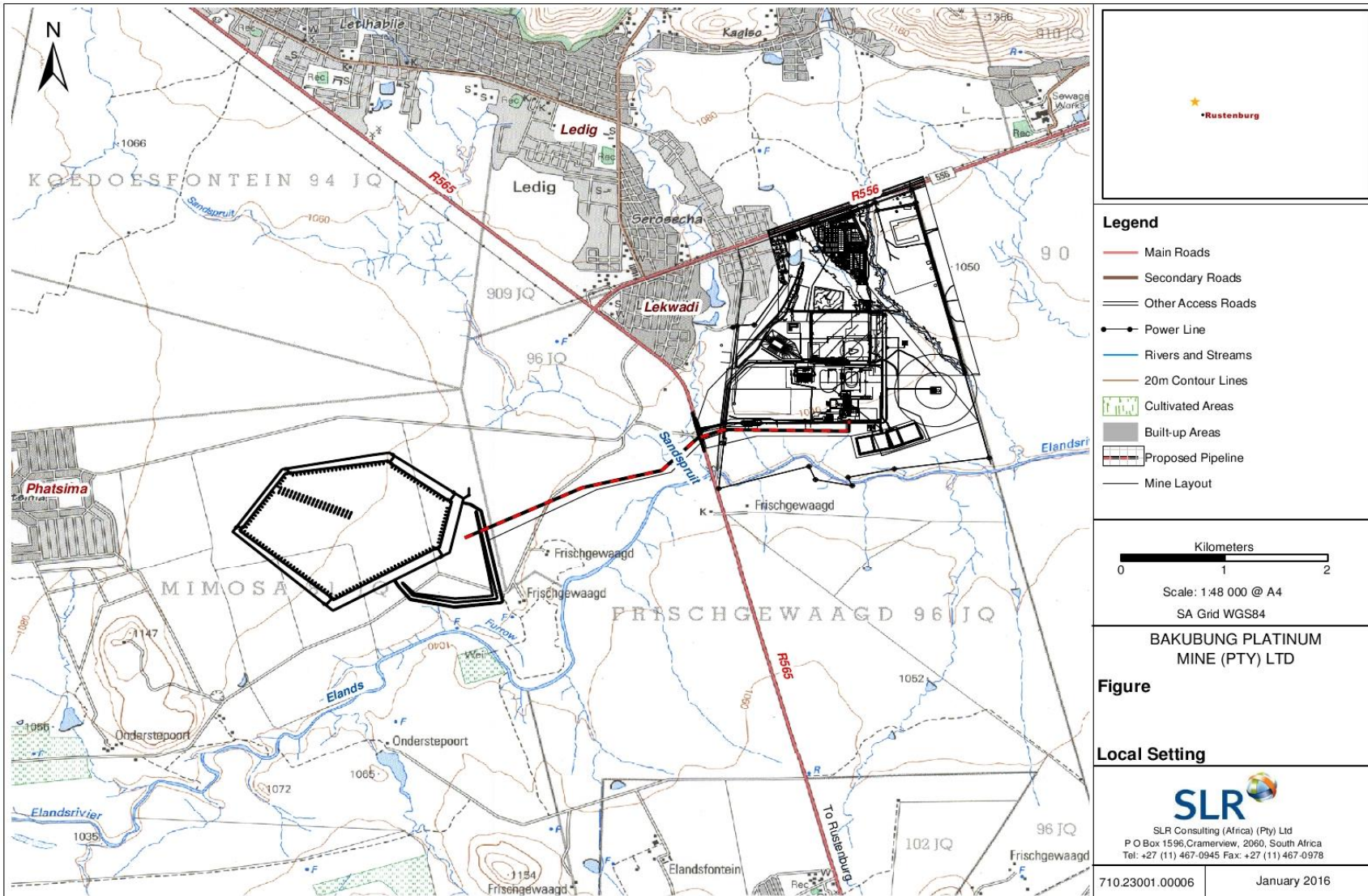


Figure 1-2 Project location 1

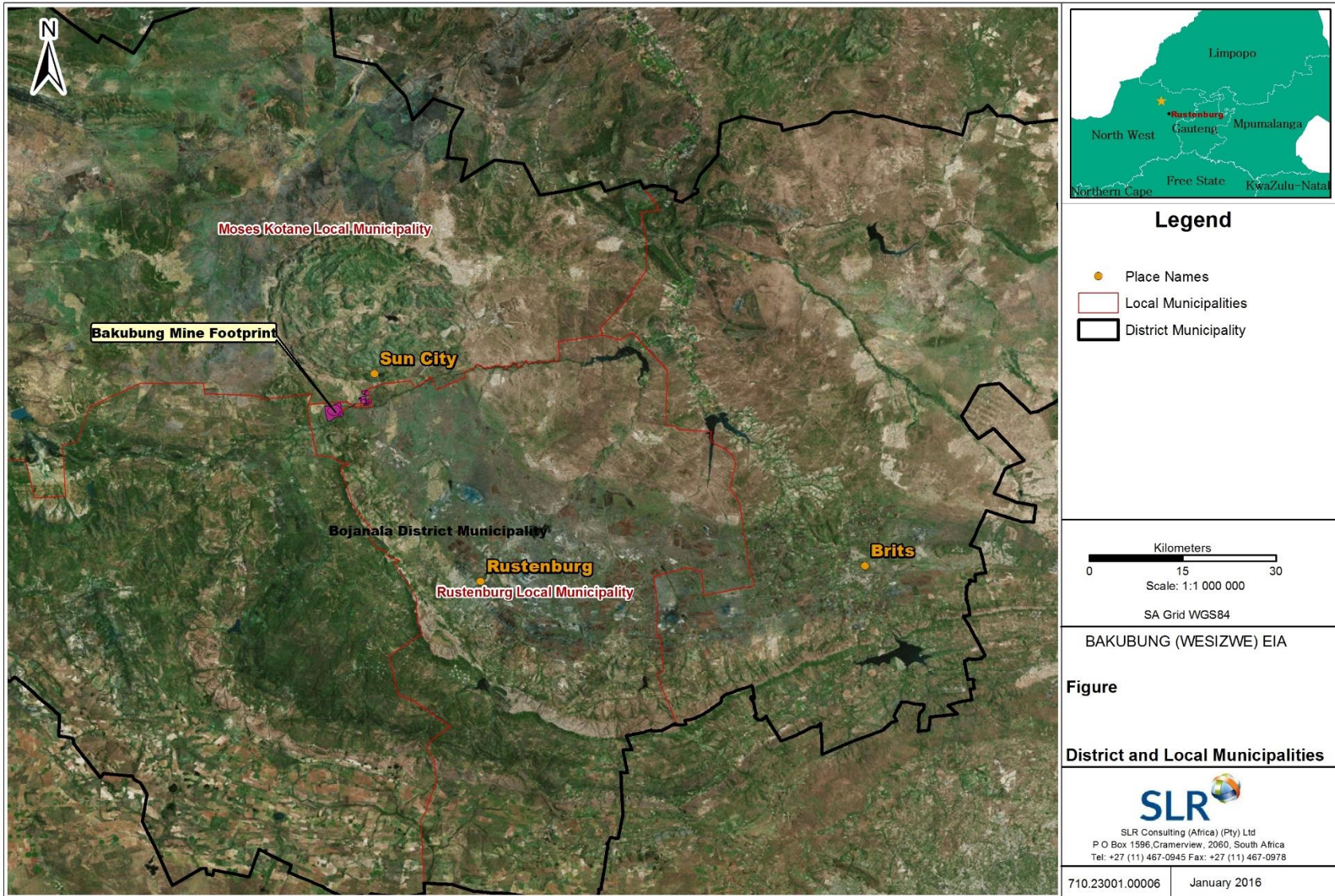


Figure 1-3 Project location 2



1.2 Terms of Reference

The Terms of Reference (ToR) for the Social Impact Assessment are summarised in **Box 1-1**.

Box 1-1 Terms of reference for the Social Impact Assessment

To undertake a social impact assessment for the proposed amendment to the Bakubung Platinum Mine, including:

- review existing data (including previous EIA and the final Draft Scoping Report for the amendment Project);
- compile a socio-economic baseline description and relevant social issues in the vicinity of the project;
- identify and assess the impacts of the project on the socio-economic environment;
- provide mitigation measures and recommendations for the identified impacts; and
- draft and final reports will be provided in pdf and MS word format.

In addition, the specialist report will meet the requirements of Appendix 6 to the 2014 EIA regulations;

1.3 Method

In 2008, an EIA (and associated SIA) was undertaken for the development of the Bakubung Platinum Mine. At the time of that study, a detailed socio-economic survey was undertaken, and the SIA was developed based upon that detailed information about the Project area, notably the neighbouring communities of Ledig and Phatsima. However, the 2008 SIA provided limited to no information about the affected district and local municipalities.

This SIA is a higher-level study that is considered to be suitable for the scope of work for this proposed Project; it has been undertaken in accordance with the guidelines for Social Impact Assessment as compiled for the Western Cape Department of Environmental Affairs and Development Planning (DEA&DP) by Barbour (2007). The core components include:

- description of the socio-economic baseline environment;
- identification and assessment of socio-economic impacts (construction, operation and rehabilitation phases); and
- formulation of mitigation and enhancement measures.

A detailed review was undertaken of relevant secondary documentation, a site visit was undertaken on 2 December 2015, and key informant interviews were conducted with selected Wesizwe informants (refer to Section 6.1). Given the extent of consultation that has taken place in the local area, and the amount of existing documentation, interviews with external stakeholders were not deemed necessary for the scope and scale of this Project. Direct feedback from interested and affected parties, and the authorities was recorded as part of the public participation process; this feedback has been reviewed and integrated into the SIA.

The previous SIA forms the basis upon which impacts were identified and built upon for this Project. Not all impacts have been deemed relevant for the proposed additional activities, impacts have been simplified and collated as required for these activities. In addition to using the original SIA; the baseline, impact identification, impact assessment and formulation of mitigation measures, also draw on relevant secondary documentation, selected key informant interviews, Scoping level public participation, project description provided and professional judgement of the social specialist.

Each of the identified impacts has been assessed based on the impact rating methodology provided by SLR in order to determine their likely significance, where Significance = Consequence (Severity, Spatial Extent and Duration) x Probability. The methodology used to assess impacts and the proposed mitigation measures is presented in *Annex B*. Impacts have been assessed for the construction, operation and decommissioning phases.

Mitigation and enhancement measures are proposed that will be implemented to avoid, minimise, reduce or compensate for any adverse impacts and enhance the positive impacts. Assuming effective implementation of the measures, each impact is re-evaluated using the same assessment criteria to determine the significance of the residual impacts following mitigation. Mitigation measures are provided that align with those previously given (and reflected in the Management Plan), and the commitments made in the Social and Labour Plan.

This SIA has been undertaken in accordance with the Environmental Impact Assessment Regulations (733 of 2014) Appendix 6. **Table 1-1** indicates the location of each requirement in this report.

Table 1-1 EIA Regulation requirements for Specialist Reports

	NEMA Regs (2014) - Appendix 6	Reference to relevant section in report
1	A specialist report or a report on a specialised process prepared in terms of these Regulations must contain -	
(a) i	the person who prepared the report; and	Section 7
(a) ii	the expertise of that person to carry out the specialist study or specialised process;	Section 7
(b)	a declaration that the person is independent in a form as may be specified by the competent authority;	Section 7
(c)	an indication of the scope of, and the purpose for which, the report was prepared;	Section 1.2
(d)	the date and season of the site investigation and the relevance of the season to the outcome of the assessment;	Section 1.3 Seasonality is not relevant for SIA
(e)	a description of the methodology adopted in preparing the report or carrying out the specialised process;	Section 1.3

(f)	the specific identified sensitivity of the site related to the activity and its associated structures and infrastructure	Section 3 No specific sensitivity identified
(g)	an identification of any areas to be avoided, including buffers;	None identified
(h)	a map superimposing the activity including the associated structures and infrastructure on the environmental sensitivities of the site including areas to be avoided, including buffers;	Section 1.1.1
(i)	a description of any assumptions made and any uncertainties or gaps in knowledge;	Section 1.4
(j)	a description of the findings and potential implications of such findings on the impact of the proposed activity, including identified alternatives, on the environment;	Section 4
(k)	any mitigation measures for inclusion in the EMPr	Section 4
(l)	any conditions for inclusion in the environmental authorisation	Stated mitigation measures
(m)	any monitoring requirements for inclusion in the EMPr or environmental authorisation	As per EMPr
(n)	a reasoned opinion -	
.i	as to whether the proposed activity or portions thereof should be authorised and	Section 5
.ii	if the opinion is that the proposed activity or portions thereof should be authorised, any avoidance, management and mitigation measures that should be included in the EMPr, and where applicable, the closure plan;	Section 4
(o)	a description of any consultation process that was undertaken during the course of carrying out the study;	Section 1.3
(p)	a summary and copies if any comments that were received during any consultation process, and -	PPP feedback included in the EIA
(q)	any other information requested by the competent authority.	None requested

1.4 Assumptions and Limitations

This report is based on a number of assumptions which were made in response to limitations that were encountered. These are listed below.

- It was assumed that information provided by WPL and SLR is accurate and that the technical specifications of the Project and site selection are in accordance with the relevant requirements.

- This report and assessment are dependent on the accuracy of the publicly available secondary information; such as Statistics South Africa (StatsSA, 2011), and the 2008 SIA. The data from these sources was considered sufficient for the purposes of this study.
- The economic information used in this SIA is the most recent that could be obtained.
- No further detailed community level survey was performed as part of this SIA; the 2008 SIA provided a detailed overview of the neighbouring communities of Ledig and Phatsima.
- The assessment is based on project information provided at the time of the study.
- At the time this SIA was submitted, none of the associated specialist studies were available for review and incorporation; namely the water, noise, air quality, traffic and visual assessments. No water related impacts have been identified or assessed. Cursor links have been made to the noise, air quality, traffic and visual impacts as nuisance factors.
- Selected key informant interviews were performed (see Section 6.1). Community concerns were identified using the public participation records (ie. the comments and response register in the Final Scoping Report, 2015).
- The 2008 SIA has been used as a basis for impact identification, assessment and formulation of mitigation measures. This is to ensure that the findings are aligned with BPMs current management approach. Most impacts fall away completely and others are being managed through the existing management plan; the assumption is that BPM is in full compliance with all commitments in their existing Management Plan.

1.5 Report Structure

The remainder of this report is presented as follows:

- Section 2: Project overview and area of influence;
- Section 3: Social and economic environment;
- Section 4: Impact assessment and proposed mitigation;
- Section 5: Conclusion;
- Section 6: References;
- Annex A: Specialist details and declaration of independence; and
- Annex B: Impact assessment methodology.

2 PROJECT OVERVIEW AND AREA OF INFLUENCE

2.1 Project Overview

The scope of this EIA (thus the Social Impact Assessment) relates to the following proposed activities in addition to the already authorised Bakubung Platinum Mine:

- tailings pipeline between the mine and the Tailings Storage Facility (TSF);
- increase in the capacity of the concentrator plant from 230,000 tons per month to approx. 265,000 tons per month;
- increased capacity of the mine product stockpiles;
- relocation of the ore crusher circuit from underground to the surface;
- inclusion of the minerals in the waste rock into the mining licence, as the waste rock may potentially be crushed and sold as aggregate;
- construction of erosion control measures along watercourses within the mine;
- construction of a noise reduction berm through a watercourse;
- storage and handling of dangerous goods such as diesel and reagents on site;
- various pipeline and road crossings over watercourses, including a bridge crossing;
- new sewage and water pipelines;
- sewage treatment plant (already authorised);
- new internal mine roads, and construction of an approved mine access road through a watercourse;
- ventilation shafts and raise boreholes;
- pollution control dams;
- return water dams;
- generators or possibly a solar power plant on site, for back up power;
- a salvage yard for temporary storage of general and hazardous waste;
- construction of phase 1a of the mine housing; and
- construction of a larger TSF (and associated infrastructure) on the farm Mimosa 81JQ, the area will increase from 142 ha to ~166 ha and the height will be ~44m.

2.1.1 Fit with Planning

National, provincial and local level Acts, White Papers and development strategies/ plans all support local economic development and employment creation, most recognise resource extraction/ mining as a key sector for achieving these objectives.

The BDM, has a number of key strategic objectives that aim to support economic growth and investment in the district. Mining and energy is one of the key sectors identified in the BDM Growth and Development Strategy; the objectives for the sector are outlined below and most will be supported by the proposed Project.

- To ensure that public sector investment in critical bulk infrastructure development supports potential expansion programmes of mining groups.
- To increase levels of beneficiation of precious metals and contribute to the economic diversification of the district.
- To increase the proportion of products utilised by the mining sector which are manufactured and obtained within the district.
- To support the implementation of the mining charter requirements.
- To ensure better alignment between the Corporate Social Investment programmes of mining companies and priorities of public sector investment programmes.
- To explore opportunities for small-scale mining ventures.
- To ensure that future spatial and infrastructure development takes cognisance of the impact of existing and future mining operations and mining rights and to ensure that infrastructure development is sensitive to the expected lifespan of large individual mining operations.
- To integrate mining settlements with the broader spatial and settlement pattern of the district to ensure its long term sustainability and viability after mine or shaft closures.

2.2 Area of Influence

As previously mentioned, the footprint of the proposed Project is located in the North West Province's BDM, and lies across the MKLM and RLM. The directly affected area constitutes the MKLM and RLM; most notably the settlements of Ledig, Phatsima, Chaneng, Frischgewaagd, and Boshhoek. The 4 wards that are likely to be the most directly affected are wards 14, 28 and 30 in MKLM, and ward 1 in the RLM. For the purposes of this assessment, the BDM and to a limited extent, the Thabazimbi Local Municipality (TLM) (notably the town of Thabazimbi)¹ are considered to form the Project's indirect Area of influence (Aoi).

Together, the directly and indirectly affected Aoi is hereafter referred to as the 'Project area'. Site locality maps are illustrated in

¹ While TLM is considered to form part of the indirect Aoi, it is not described in the baseline description. Tis likely to experience positive impacts in terms of employment opportunities and economic impacts linked to increased expenditure in the local economy. Negative impacts are unlikely to be experienced by the TLM.

Figure 1-1 Proposed infrastructure layout

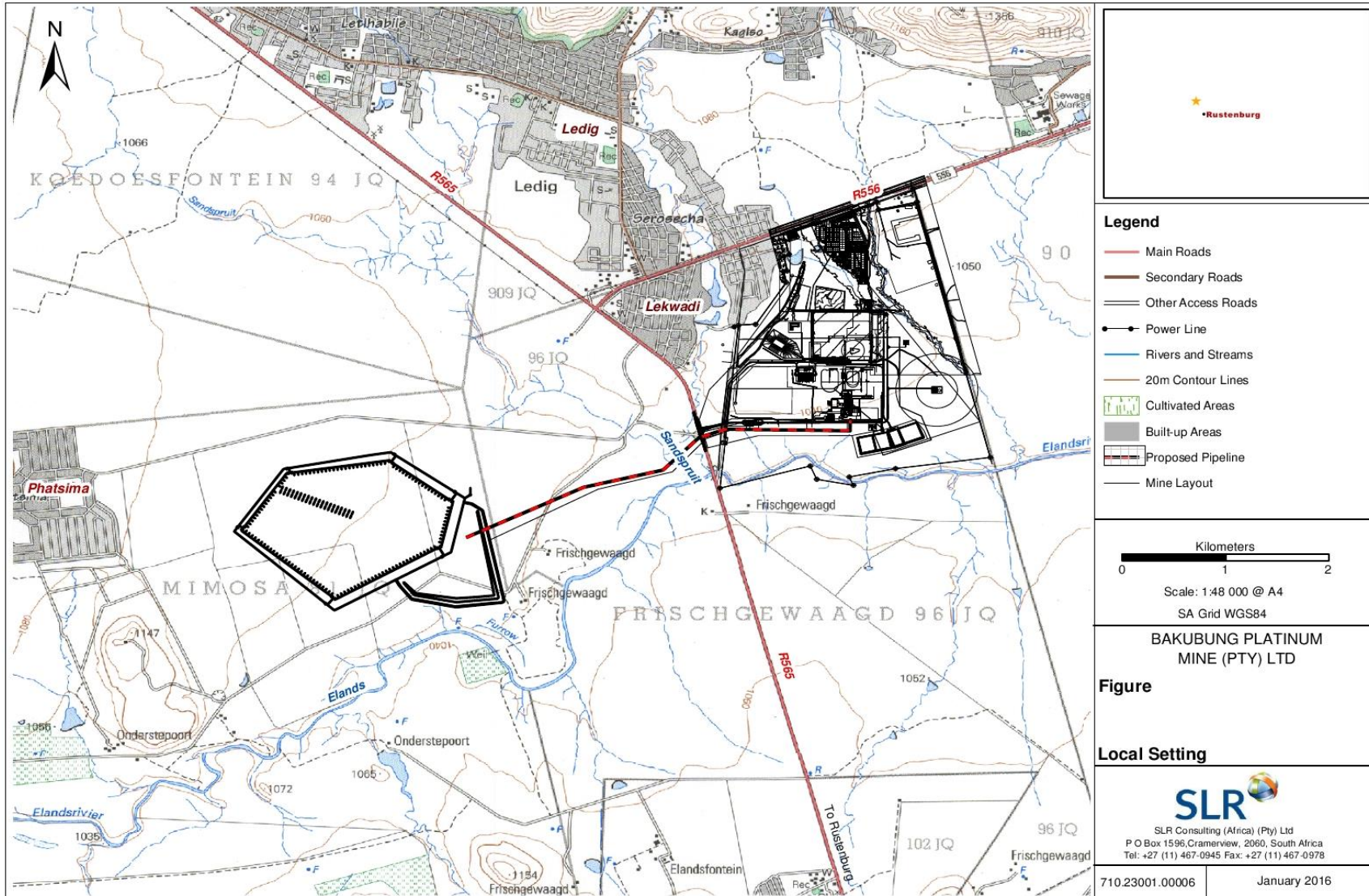


Figure 1-2 and **Figure 1-3**.

The 'Project site' refers to the actual footprint of the proposed facility, including the mine, TSF and pipelines (see

Figure 1-3 Project location 2



).

The term 'local' is used to refer to the full extent of the Aol; therefore, it refers to the BDM and the TLM, most specifically the MKLM and RLM. The definition of local is relevant when identifying and assessing impacts and in the formulation of mitigation and enhancement measures (specifically those that may contribute towards social and economic development of the local area).

3 SOCIAL AND ECONOMIC ENVIRONMENT

3.1 Overview

The surface area of BDM is 18,370km² (~17% of the North West Province), however the district is home to ~38% of the Province's population². The majority of the BDM is rural with low population densities (~64 persons/km²) making infrastructure and service provision difficult. Settlements are scattered throughout the north western and north eastern parts of the district, RLM is the most populated LM in the district; the largest formal settlements are Rustenburg and Brits (in Madibeng LM). MKLM is the largest LM comprising ~31% of the total area of the BDM and RLM comprises 19% of the area. The closest communities are Ledig located in MKLM and Phatsima in RLM.

3.2 Administration

There is a dual system of governance in the Province *i.e.*; the political structures of governance and the traditional authorities. Each of the administrative structures is briefly described below.

3.2.1 The Political Structures of Governance

This sphere of governance is 3 tiered, namely provincial, district and local municipalities. The roles and responsibilities of each sphere of government are:

The **provincial government** is responsible for providing the strategic vision and framework for the province. They are responsible for ensuring cooperation and collaboration between municipalities and ensuring that each municipality performs their respective functions.

District municipalities are responsible for the development of Integrated Development Plans and for the overall provision of services and infrastructure within the districts, including for the local municipalities. The purpose of **district and local municipalities** sharing the responsibility for local government is to ensure that all communities, particularly disadvantaged communities, are afforded equal access to resources and services. It is anticipated that resources (eg. human, financial and intellectual) and opportunities will be shared more widely through this model.

The BDM is located towards the north east of the North West Province; it comprises five local municipalities, namely Moretele LM; Madibeng LM; RLM; Kgetlengrivier LM; and MKLM.

3.2.2 Traditional Authority

The people living in the Project area, most specifically Ledig, are the *Bakubung baRatheo*. The Box below provides more information about the Bakubung people.

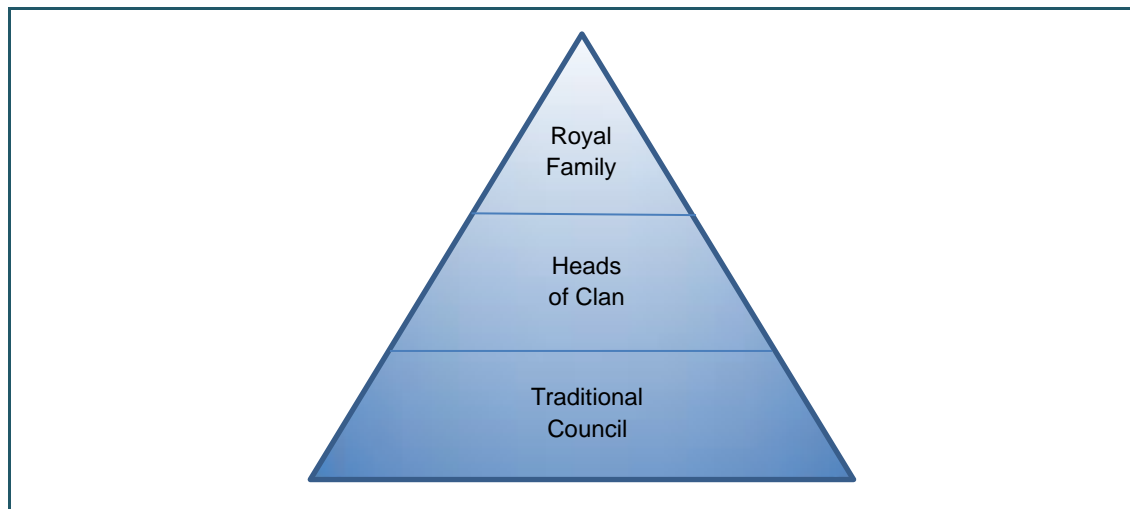
² Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

The *Bakubung baRatheo* are Tswana speakers and trace their origins back to Lesotho. The Tswana are of Sotho stock, and consist of people who belong to more than 60 indigenous groups (tribes) associated with Botswana and adjacent areas south of Botswana. The Tswana include descendents of the four main Sotho-Tswana migrations into South Africa. In the early 1960s the Bakubung were living on the farm Palmietkuil 25 IQ in the Boons area, east of Derby in the current North West Province. In the early 1960's the Bakubung were removed from Palmietkuil by the previous government and resettled on the farm Ledig 909 JQ, north of Rustenburg. To facilitate the resettlement of the Bakubung the Government transferred additional farms for them to settle on in 1966 (constituting 4,500 ha). Farms Frischgewaagd 96 JQ and portions of Ledig 909 JQ, a portion of Zandriverspoort 210 JQ, of Koedoesfontein 94 JQ, of Palmietfontein 208 JP, and the whole of Mahobieskraal 211 JP were transferred to the Bakubung for settlement in 1981 by the then Bophuthatswana Government. These farms constitute the *lefatshe* (tribal area) of the Bakubung *morafe* (the people - tribe). Currently these are the portions of land over which the Bakubung have jurisdiction, the title deed is held by the Department of Land Affairs, as is the case with all communal land in South Africa.

Source: Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008, compiled by Perisseuo Consulting cc.

The leadership structure of the Bakubung baRatheo consists of the Royal Family, Heads of Clans and the Traditional Council, see **Figure 3-1**

Figure 3-1 Bakubung baRatheo leadership hierarchy



The Royal Family is led by a *Kgosi* (king); the current acting Kgosi is M Monnakgotla. The Kgosi has a responsibility to manage the tribe, to initiate public village meetings (*dikgotla*), and to follow the rules and advice of the national government and the members of the tribe. A Kgosi cannot make decisions in

isolation, thus BoKgosi (an institution of tribal leadership) play an advisory role when it comes to decision-making for the community³.

The Heads of Clans act as custodians for their tribes and report to the Royal Family, who in turn oversees the entire community's assets.

The Traditional Council acts as an intermediary between the community and the Clan leaders. The Council is also the line of communication for relating with external parties on matters pertaining to the community and its development. They also participate in the drafting of policy in the local context and they advocate for social unity among traditional communities. The Bakubung baRatheo are one of the first Traditional Authorities in North West Province to have re-constituted as a Traditional Council as prescribed by the Traditional Leadership and Governance Framework Amendment Act, 2003 (Act 41 of 2003). The Bakubung baRatheo Traditional Council is composed of 60% traditional members and 40% elected members, with 30% of the members being female. The Council functions in close relationship with the MKLM since October 2005. Through the MKLM the Bakubung have representation in the BDM. The Bakubung baRatheo Traditional Council takes responsibility for a large number of municipal functions in *lefatshe*, in that the councilors act as reporters of problems, and act as intermediaries between the municipality, the council, and the people on the ground who have elected them to the council. Results of a survey conducted in the Ledig and Phatsima settlements during August 2007 indicate that ~92% of respondents in Ledig accepted the authority of the Bakubung baRatheo Traditional Council.

3.3 Population

The population of BDM was 1,507,505 people in 2011, with a growth rate of ~2.4% per annum. RLM has the largest population in the district comprising ~46% of the district's population. The population of MKLM is ~21% of the BDM. Between 2001 and 2011, the population growth rate was highest in the RLM at 3.5% (a reduction from 4.3% in 2001); while the growth rate of MKLM was only 0.22% (also a reduction since 2001). The population density varies significantly across the Project area; it is highest in RLM at 161 persons/km² and only 42 persons/km² in MKLM, as compared to ~64 persons/km² for the BDM. The low population density in MKLM can be attributed to its predominantly rural nature with land primarily being managed via communal land tenure; and with 92% of the settlements located on tribal/ traditional land. In RLM, only 30% of settlements are on traditional land, the majority (68%) of settlements are located in urban areas⁴.

The Project area has a young population, ~26% of the population of BDM, 29% of MKLM and 24% of RLM are between the ages of 0-14 years. Rustenburg has the largest population (73%) of working age between 15 and 64 years, this reflects the large number of people working in the mining sector in the LM.

Table 3-1 provides the age composition in the Project area.

³ Government of Botswana (30 April 2008). "Bogosi Act". Available at: <http://faolex.fao.org/docs/pdf/bot91578.pdf>. Accessed 27 January 2016.

⁴ StatsSA, 2011.

Table 3-1 Age composition in the Project area

Age	Bojanala DM	Moses Kotane LM	Rustenburg LM
0-14	26%	29%	24%
15-64	68%	63%	73%
65+	5%	8%	3%

Source: StatsSA, 2011

On average, males are most dominant in the BDM at 53%, RLM has slightly more men at ~55% and MKLM has an almost equal number of men and women. The higher number of men is evident between the ages of 0 and 64 years, there are more women above the age of 65 years. There are significantly more female headed households in MKLM than in RLM, at 44% and 26%, respectively.

The racial composition of the area is predominantly Black African; with ~98% of MKLMs population being Black African and 89% Black African in both the BDM and RLM. Approximately 9% of the population of BDM and RLM are White and reside in the Rustenburg area – likely to be mine employees (direct and indirect). **Table 3-2** illustrates the racial composition in the Project area.

Setswana is the most dominant language, notably highest in MKLM (82%).

Table 3-2 Racial composition in the Project area

Race Group	Bojanala DM	Moses Kotane LM	Rustenburg LM
Black African	89%	98%	89%
White	9%	0.8%	9%
Coloured	0.9%	0.3%	0.9%
Indian/Asian	0.8%	0.5%	0.8%

Source: StatsSA, 2011

3.4 Education

Levels of education and literacy increased in the BDM between 2006 and 2010, the functional literacy rate was ~74% in 2010⁵. Approximately half (~52%) the adult population in the BDM have completed some secondary schooling, including Grade 12⁶. RLM has the highest functional literacy level in the district (78%)⁷ and has generally higher levels of education than MKLM⁸. These statistics are reflected in **Table 3-3**. In RLM, ~67% of the population have some secondary education and/ or completed Grade 12, as compared to 62% in MKLM. The differences in literacy rates of the LMs may be attributed to their respective levels of urbanisation and employment opportunities.

⁵ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

⁶ Wesizwe Bakubung Minerals, Social and Labour Plan, February 2015.

⁷ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

⁸ StatsSA, 2011.

Table 3-3 Levels of education for population aged 20 years and above

Level of Education	Bojanala DM	Moses Kotane LM	Rustenburg LM
No schooling	8%	9%	5%
Completed primary school	-	17%	5%
Some secondary education	-	35%	36%
Completed Grade 12	29%	27%	31%
Higher education	7%	5%	9%

Source: StatsSA, 2011.

The 2007 survey, undertaken for the original SIA showed that ~63% of the population had attended school, and ~53% had completed Grade 10. A very low 0.3% of the population had attended and completed tertiary level qualifications. Notably, in Ledig and Phatsima, the 2007 survey found that 10% of people older than 19 years were illiterate, ~23% were semi-literate, and ~29% were literate. Approximately 38% of the population completed Grades 11-12⁹.

3.5 Economic Profile

In 2013, the regional gross domestic product (GDP-R) of North West Province equated to over 5% of the national economy¹⁰. GDP growth for the Province was lower than the national growth rate at 1.6% as compared to South Africa's 1.9%. Similarly, per capita GDP was considerably higher nationally (R37,632) versus North West Province's R28,437 per capita GDP¹¹. Inflation in 2013 was 5.7% nationally and provincially. The unemployment rate was 25.5% nationally and 26% for North West Province. According to *The World Fact Book* (2012), the major provincial export products are gold, diamonds, platinum, other metals and minerals, machinery and equipment.

Mining is a primary sector driving the economy having contributed over 30% to the economy in 2010¹². North West Province's mining contributed ~16% to mining GDP in South Africa¹³. The Province contributes 50% of the world's platinum, as well as gold, diamonds, chrome, vanadium, granite, slate, limestone, dimension stone, nickel, silica, manganese, fluorspar, zinc and andalusite. Thus the economic, social and physical characteristics of the greater Project area are largely determined by the dominant mining sector.

Mining activities are located along the Bushveld Complex; one of the most heavily mineralised areas in the world – with largest platinum producing mines in the world. In 2011, there were a total of 95 mines in

⁹ Wesizwe Bakubung Minerals, Social and Labour Plan, February 2015.

¹⁰ IHS Global Insight in North West Development Corporation, Invest in North West: the heartbeat of trade, investment and economic growth. No date.

¹¹ IHS Global Insight in North West Development Corporation, Invest in North West: the heartbeat of trade, investment and economic growth. No date.

¹² Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

¹³ Wesizwe Bakubung Minerals, Social and Labour Plan, February 2015.

the Province, accounting for nearly 25% of provincial employment, a significant increase from 2003 (16%). Following mining, community services, trade, finance and transport were the next most economically dominant sectors – boosted by mining sector activities¹⁴.

Other than mining, sectors that play an important role in the local economy (but may not be the highest revenue contributors) are outlined below¹⁵.

- Agriculture: more than 20% of South Africa's maize is grown in North West Province; livestock (cattle and poultry), sunflower seeds/ oils, nuts, citrus and tobacco are all exported from the Province.
- Manufacturing: automobile/ non-metallic minerals, fabricated metals, food processing, soya protein are key manufactured goods.
- Tourism: diverse tourist attractions include cultural, natural and historical/ heritage sites.
- Services: businesses and financial services contribute 14% to the Provincial GDP and accounts for 5% of employment.
- Green economy: high potential renewable energy opportunities in the Province.

3.5.1 Local Economy

BDM is considered to be the economic growth centre of the Province, contributing the majority of total production output and employment opportunities. The district economy has grown significantly from a total economic output (gross value added (GVA)) of R12.2 billion (bn) in 1996 to R18.3 bn, in 2003. In 2010, the regional economy grew to just under R54 bn (this growth was linked to the commodities boom)¹⁶¹⁷. MKLM and RLM closely mirror the district GVA trend between 2001 and 2010.

Figure 3-2 provides an overview of the contribution of various economic sectors to the economy of the North West Province, BDM, MKLM and RLM. Mining was the most dominant sector at the provincial and district levels, as well as in RLM. The GVA by mining was almost 50% in RLM; finance, community services and trade were the next most dominant sectors in the municipality. Trade and community services were the most dominant sectors in MKLM at more than 25% and 20%, respectively¹⁸; followed by mining, transport and finance.

The district's economy largely mirrored the mining and manufacturing growth pattern. This indicated that the economy is heavily dependent on the mining and manufacturing sectors and that a more diversified approach to planning is required in the future¹⁹.

¹⁴ StatsSA, 2011.

¹⁵ North West Development Corporation, Invest in North West: the heartbeat of trade, investment and economic growth. No date.

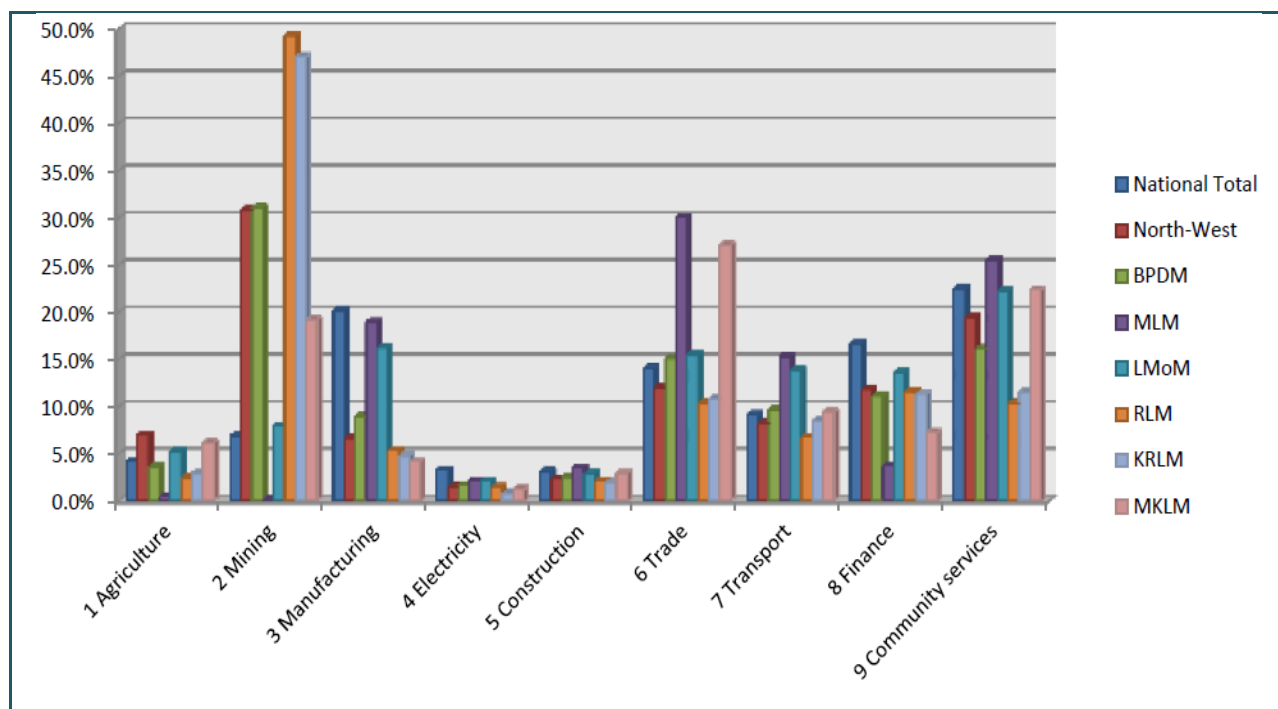
¹⁶ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

¹⁷ No current statistics could be sourced to illustrate the current economic crisis.

¹⁸ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

¹⁹ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Figure 3-2 Overview of economic sectors



Source: Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Table 3-4 presents the dominant and next most dominant economic sectors in BDM, MKLM and RLM.

Table 3-4 Key economic activities in the affected municipalities

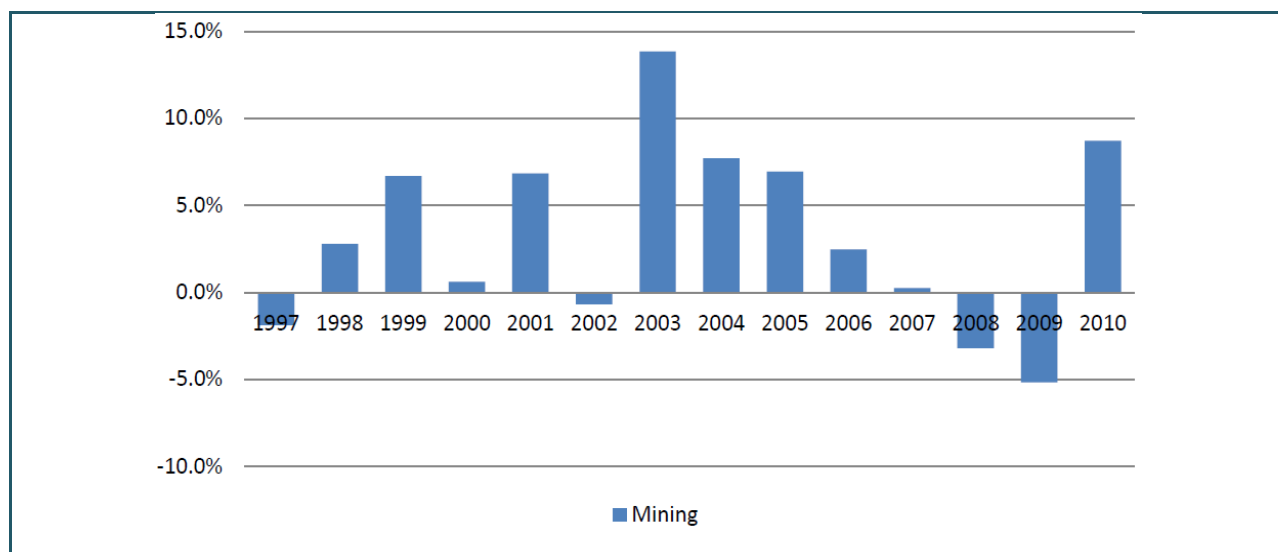
Municipality	Dominant sector	2 nd most dominant sector
Bojanala DM	Mining and quarrying (7%)	Wholesale and retail (3%)
Moses Kotane LM	Tourism and hospitality (10%) Mining and quarrying (6%)	Community services (5%)
Rustenburg LM	Mining and quarrying (15%)	Community Services (5%)

Source: StatsSA Community Survey, 2007 in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

A further description of the most dominant economic sectors is provided below.

Mining as a primary sector in the Project area followed an unstable growth path between 1997 and 2010, see **Figure 3-3**. 2003 was the strongest year historically and 2008-2009 were difficult years marked by negative growth (the latter trend can be attributed to the 2008-2009 economic recession).

Figure 3-3 Growth pattern in the mining sector, 1997-2010



Source: Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Currently, the resources sector is also struggling amidst a weak Rand and a volatile socio-political climate. Key challenges facing the mining sector were described in the BDM Integrated Development Plan (IDP), as follows²⁰:

- perceived inability of the public sector to provide bulk infrastructure to support mining expansion;
- degraded and improperly managed bulk infrastructure;
- low levels of beneficiation contributing to economic development of the district;
- large portion of inputs used by mining sector obtained from outside BDM;
- failure to manage the mining supplies manufacturing value chain;
- sensitivity of the mining sector to international commodity prices and economic conditions;
- limited opportunities for small-scale mining ventures;
- environmental impacts;
- impacts of HIV/AIDS on the labour force;
- resources are non-renewable;
- insufficient alignments of corporate social investment initiatives (and similar) with identified district priorities and programmes; and
- expanding mining sector places increased pressure on limited water resources.

There are 6 other mines operating in the Project area, all of which mine platinum group metals. These mines are:

- Bafokeng Rasimone Platinum Mine;
- Anglo American Platinum's Rustenburg Section;

²⁰ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

- Anglo American Platinum's Union Section;
- Impala Platinum;
- Platinum Group Metals; and
- Platmin.

Tourism experienced steady growth (averaging 20%) between 2006 and 2010 - this figure may be skewed by the 2009 Confederations Cup and the FIFA World Cup of 2010. Growth in tourism continues despite there being a corresponding growth in mining activity in the Project area. Social visits are the primary reason for tourists visiting the district; ~67% of tourist activity, followed by leisure tourists at ~16%. People travelling for business and other (medical, religious, etc.) accounted for ~10% and 8%, respectively. The most prominent of the tourism attractions in the district are:

- Sun City which is a high-end travel destination that offers a range of recreational activities including casino, game drives, sporting activities and theatre/ cultural events. It is located approximately 2km (east north east) from the proposed Project site.
- The Pilanesberg National Park/ Game Reserve is located north of the site, and the lion camp at the Sundown Ranch Hotel are also relatively close to the proposed site (~2km away).
- The Cradle of Humankind; this is located a far distance from the Project site.

A number of smaller nature reserves are also found in the areas surrounding the affected Project area.

Agriculture is practiced in the form of crop and livestock farming primarily for subsistence purposes. Nearly 50% of households have access to land where they grow vegetables and fruit; this is predominantly undertaken in their yards, ~13% of respondents from Ledig cultivate crops (maize) on communal land²¹.

Approximately 12% of households in Ledig and Phatsima keep livestock, most of which is kept in their yards. Poultry is the most commonly kept livestock type (~8% of the 12% of households), goats are kept by nearly 5% of the households, cattle by just over 2%, and sheep and pigs by ~1%²². Livestock farming is practiced in the area immediately surrounding the proposed Project site (and previously on the mine site itself²³) by a small number of households. Livestock (notably cattle) are kept as a possible financial hedge against times when money is needed²⁴. However, much of the land in MKLM is degraded to such an extent that further grazing is no longer possible due to overgrazing or grazing land being overtaken by mining. In 2007, *Ipopeng-Hlanganani Farmers Association*, indicated that there was no further capacity to accommodate additional cattle on the already overgrazed communal grazing land.

²¹ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008, compiled by Perisseuo Consulting cc.

²² Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008, compiled by Perisseuo Consulting cc.

²³ Prior to the start of construction, compensation was provided to the 9 affected cattle farmers for the loss of grazing land. Alternate land was secured for their use.

²⁴ Els & Bothma (2000) in Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008, compiled by Perisseuo Consulting cc.

3.5.2 Employment

At the district level, formal sector employment opportunities grew from 206,680 in 1996 to 306,225 in 2010. The largest employer was the mining sector (43%) followed by trade, community services and manufacturing, see **Table 3-5**.

Table 3-5 Bojanala DM employment contribution by sector in 2013

Sector	%
Mining	43
Trade	15.4
Community services	13.6
Manufacturing	6.1

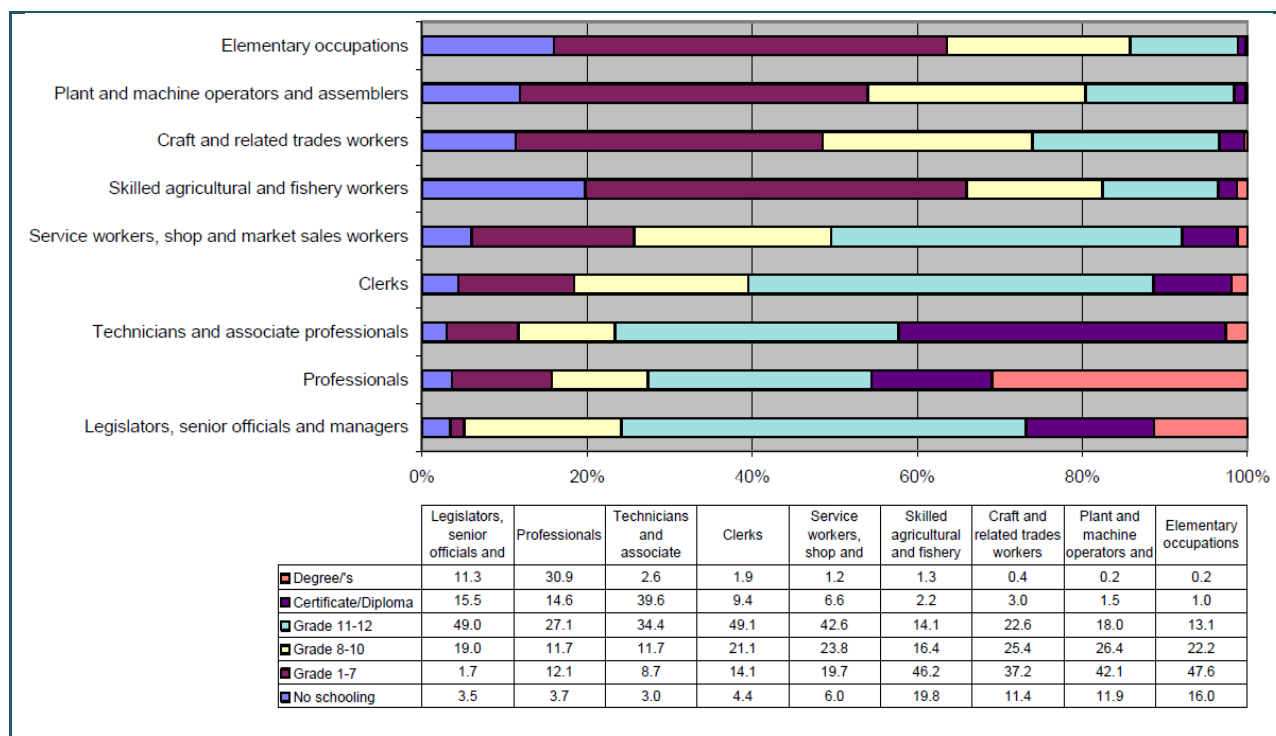
Source: Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Of the employed population, males are by far the most dominant, 97% are males with only 3% females²⁵ - with the exception of people employed in private households and community sector jobs.

Even though the the functional literacy rate is currently higher than previously in the district, the population still shows signs of generally low levels of education in the types of occupations that dominate in the BDM, see **Figure 3-4**.

²⁵ SuperCROSS cross-tabulation (2006) in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Figure 3-4 Occupation vs. level of education



Source: SuperCROSS cross-tabulation (2006) in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

The figure above, clearly indicates that those with no schooling or some primary level education are most commonly employed as agricultural workers, in elementary occupations, as plant and machine operators, and in craft and trade related occupations. People who have attained Grade 11 or higher tend to work in the retail and service sector, as clerks, technicians or professionals and as legislators, senior officials and managers²⁶.

Slightly more than 50% of the employed population in RLM work in the mining sector, followed by trade and community services.

At a community level, in Ledig and Phatsima, the tourism and hospitality industry is the primary employer (~43%); Sun City provides ~80% of all hospitality industry and tourism jobs in the communities. Construction and mining are the next largest sources of employment at 9% and 8%, respectively.

There are high levels of unemployment²⁷ in the Project area. In BDM the unemployment rate is ~31%, it is 38% in MKLM, and 26% in RLM. Youth unemployment is higher at 39% in BDM; and 47% and 35% in

²⁶ SuperCROSS cross-tabulation (2006) in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

²⁷ Unemployment refers to the percentage of economically active people - employed and unemployed but looking for work.

MKLM and RLM, respectively. A large percentage (64%) of unemployed people work in the informal economy; however, ~56% of these businesses are young, having only been in operation for less than 2 years. The turnover of these businesses is low, ~33% indicated having a monthly turnover of less than R600. The lack of financial assistance to start and grow a business is cited as being the primary limiting factor²⁸.

The communities of Ledig and Phatsima offer few employment opportunities. The WPL commissioned skills audit (2006) indicates that 42% of Ledig's economically active population are unemployed, and only 37% of the adult population are employed in permanent positions. A mere 5% are self-employed²⁹.

3.5.3 Income and Dependency

The BDM reflects a large range of income earners, with the majority of households earning less than R96,000 per year (R8,000 per month), with only 3% earning in excess of R600,000³⁰. In 2010, the annual household income for the BDM was as follows³¹:

- 37% of households earned between R0 and R42,000;
- 27% earned between R42,000 and R96,000;
- 17% earned between R96,000 and R192,000;
- 15% between R192,000 and R600,000; and
- 3% earned above R600,000.

The average individual monthly income by sector is illustrated in **Figure 3-5**. This figure shows that the majority of employees earn less than R3,200 per month; private households and agriculture are by far the lowest payers, while the community and finance sectors have the highest percentage of people earning above R3,200. The mining sector has the majority of people earning between R1,601 and R3,200 per month and the lowest percentage of people earning less than R1,600 a month.

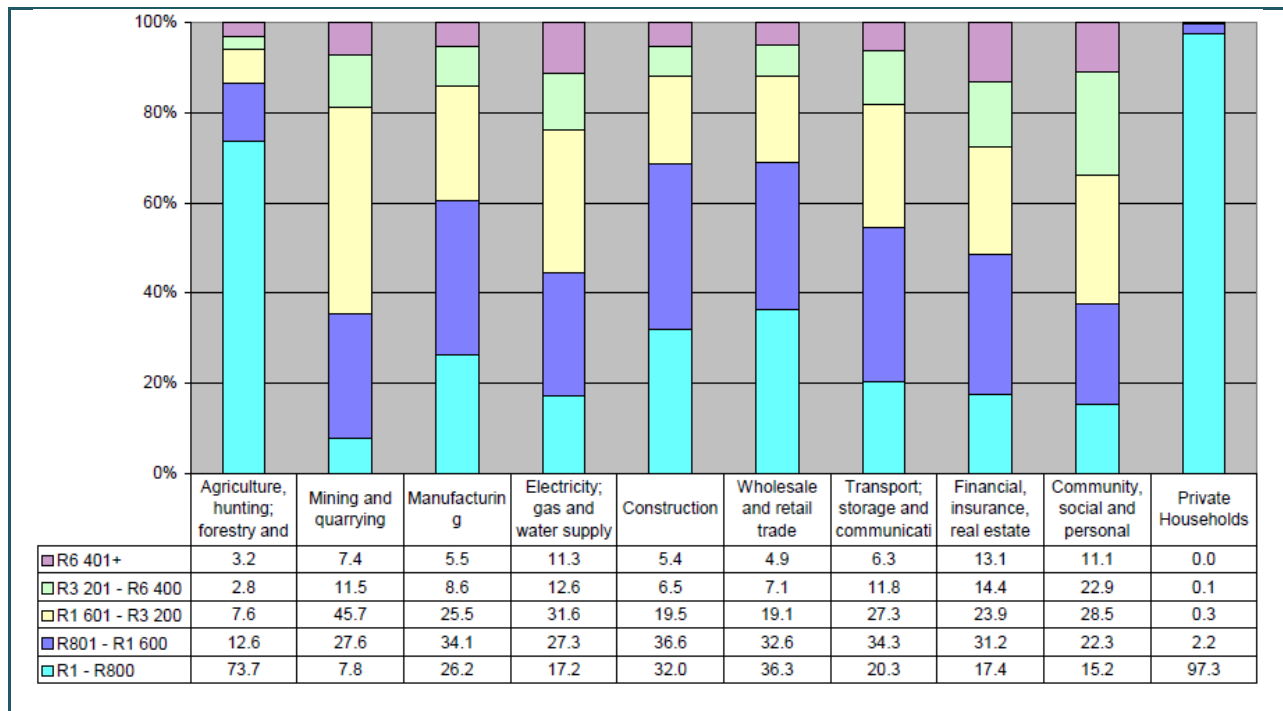
²⁸ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

²⁹ Wesizwe Bakubung Minerals, Social and Labour Plan, February 2015.

³⁰ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

³¹ Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Figure 3-5 Industry vs. individual monthly income



Source: SuperCROSS cross-tabulation (2006) in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

Household income in MKLM and RLM reflect a similar distribution to the BDM. MKLM has the lowest income levels with ~84% of the population earning less than R76,400 per year, while ~75% of RLM population also earn less than R76,400. Only 1% in MKLM and 2% in RLM earn more than R614,400 a year. See **Table 3-6** and **Figure 3-6** for more detail on household income in the LMs³².

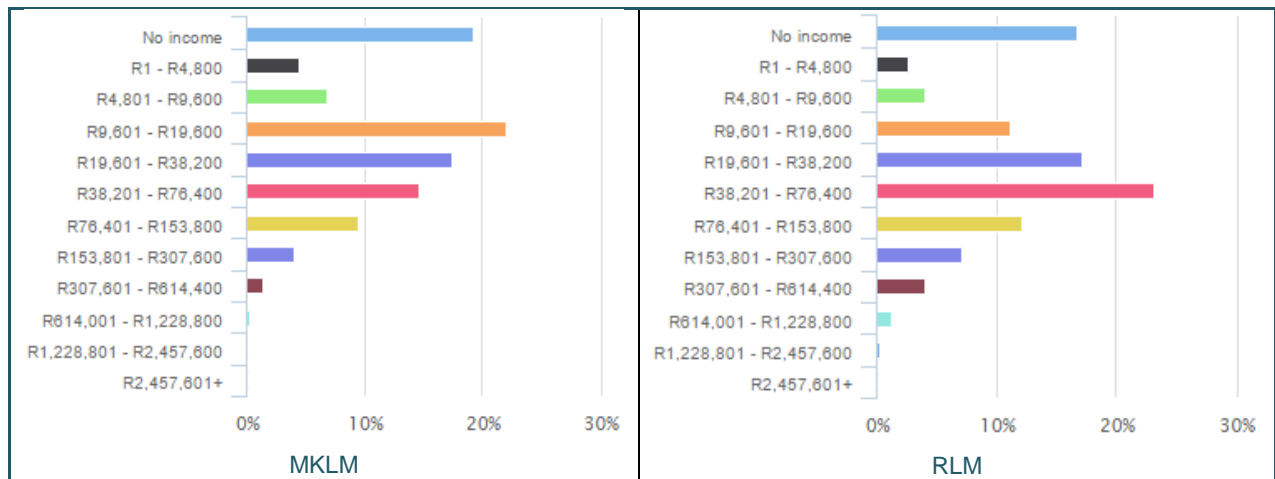
Table 3-6 Average annual household income

Annual Income	Moses Kotane LM	Rustenburg LM
No income	19%	17%
R1 – R19,600	33%	18%
R19,601 – R76,400	32%	40%
R76,401 – R614,400	15%	23%
R614,401 +	1%	2%

Source: StatsSA, 2011

³² Note that the DM and LM statistics are from different sources and years and are therefore not exactly comparable.

Figure 3-6 Average annual household income



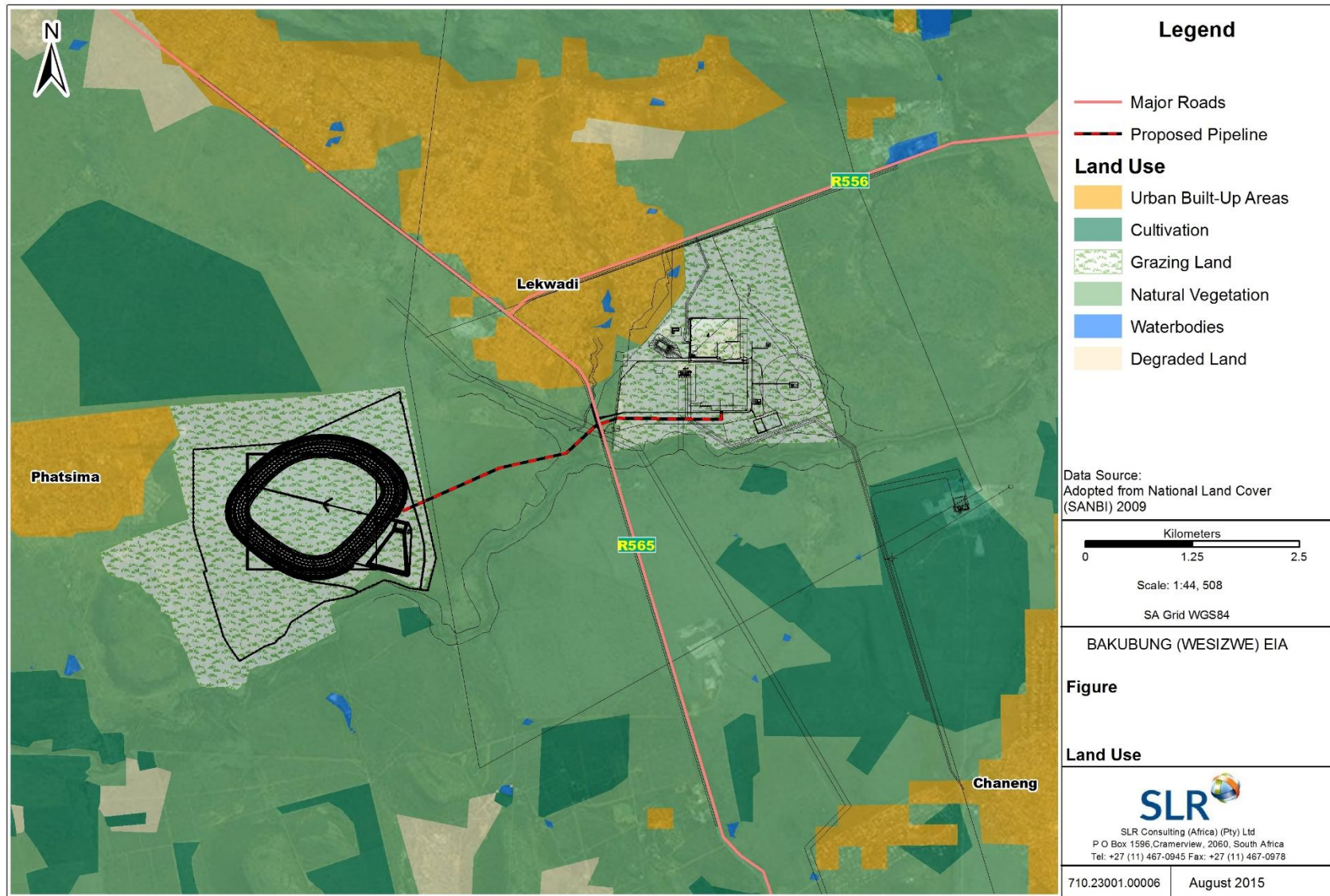
Source: StatsSA, 2011.

Combined with the low monthly household incomes are high levels of dependency in the Project area – with a dependency ratio of ~46% in BDM, ~59% in MKLM and RLMs dependency ratio is ~38%. The production potential of the population is fairly high based on the number of people of economically active age.

3.6 Land Use

The area surrounding the Project site is used for a range of different land uses. The mine and TSF are located on land that was previously used as grazing land, notably non-commercial cattle farming (see **Figure 3-7**). There are urban settlements neighbouring the Project site, namely Ledig and Phatsima; these areas include sports grounds and 2 domestic waste dump sites. The portion of Mimosa that WPL has bought (for the TSF) on behalf of BPM has been zoned for mining and fenced. BPM is currently allowing cattle to graze on the land until such time as construction on the TSF commences. The surrounding land uses include grazing, cultivation, natural vegetation, and residential (formal and informal).

Figure 3-7 Land use map



3.7 Health

Health care services are available at a community level as well as in the local municipality centres (ie. Madikwe and Rustenburg). The Provincial hospital is located in the capital, Mahikeng. The system works on a referrals basis. MKLM offers the following health care facilities; Moses Kotane hospital (530 beds), George Stegmann Hospital, Moretelelesi Hospital, 49 clinics, and 4 mobile facilities. RLM offers Ferncrest Hospital, Forona Hospital, Impala Mine Hospital, Peglerae Hospital, 20 clinics, and 8 mobile facilities³³.

The local clinics located in Ledig, Phatsima and the neighbouring communities are operated by government but the standard is reportedly low and they lack adequate resources to treat the existing population. However, regardless of their poor standards, the utilisation of the public health care system is high. According to the 2007 survey undertaken for the previous SIA, ~70% of respondents who made use of a health care facility between 2006 and 2007, attended a local clinic, and nearly 21% visited a general practitioner and only 6% went to the Provincial hospital.

Results of the 2007 SIA survey indicated that the 2 major health problems locally were tuberculosis and HIV/AIDS – these two are often interlinked. Other conditions include high blood pressure, diabetes, and problems linked to air pollution and a lack of water. Poor quality health facilities are said to contribute towards the health problems³⁴.

The BDM IDP outlines a number of concerns and shortfalls in terms of municipal health services, these include:

- long travelling distances from the rural areas to hospitals (patients and staff);
- a lack of equipment, staff and unsuitable operating hours;
- insufficient ambulance services, specifically in rural areas; and
- HIV/AIDS prevalence has a negative impact on the labour force; the mining sector is said to exacerbate the problem.

3.8 Infrastructure and Services

Infrastructure and service delivery appear to be a common and ongoing challenge in BDM and the affected local municipalities. **Table 3-7** provides an overview of the extent to which households in the Project area have access to key infrastructure and services. These statistics demonstrate that households lack access to the most basic infrastructure, most notably water and flush toilets. This below average standard of living for many households would aggravate the health status of the population.

³³ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008, compiled by Perisseuo Consulting cc.

³⁴ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008.

Table 3-7 Household access to basic infrastructure and services

	Bojanala DM	Moses Kotane LM	Rustenburg LM
Formal housing	69%	78%	69%
Water inside dwelling and < 200m from house	79%*	81%	84%
No access to piped water	8%*	7%	6%
Electricity for lighting	84%	83%	91%
Flush toilets	33%	12%	53%
Weekly refuse removal	49%	81%	70%

Source: StatsSA, 2011

* 2005 figures in Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

The majority of houses in the MKLM are owned and fully paid for, while 13% of households rent, and 21% live rent free in their dwellings. In the RLM, the majority of households rent (45%), 22% own and have fully paid off their homes, and 20% live rent free³⁵. Given that most households in MKLM are in traditional areas and most in RLM are in urban areas, these figures are not surprising. Houses in traditional areas are most likely family homes and in RLM, there are high numbers of migrant workers who are unlikely to buy property.

In the local communities, nearly 6% of households in Phatsima have access to water inside their homes and the remaining 94% had access to water in their yards. Nearly 6% of Ledig households have no access to water, while ~58% have water available in their yards, ~23% have taps in their homes and ~10% have both hot and cold taps in their homes³⁶. In Ledig, half the households reported that water supply is unreliable and generally problematic, while nearly 85% reported that the quality is good.

In the local areas, 11% of respondents had flush toilets; the majority of households have pit latrines. In Ledig, 87% of households use pit latrines³⁷.

Throughout the Project area, electricity is used for cooking, lighting and heating. Paraffin, gas, wood and candles are used as alternate fuel sources. In Ledig, nearly all households (~96%) make use of electricity for cooking. Electricity supply is considered to be poor by over 50% of the population³⁸.

The most common mode of transport in BDM, MKLM and RLM, as well as the neighbouring communities of Ledig and Phatsima is by foot. The number of people who use private vehicles is small, the use of taxis is also common.

The Integrated Development Plans for MKLM and RLM, reflect the priority areas for development as follows:

³⁵ StatsSA, 2011.

³⁶ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008.

³⁷ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008.

³⁸ Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008.

MKLM:

- water and sanitation;
- roads and storm water;
- electricity;
- social services;
- land and housing;
- economic development; and
- institutional development.

RLM:

- good governance and financial viability;
- quality basic services;
- clean and safe environment; and
- shared economic growth and job creation.

Based on the Perception Survey undertaken by Wesizwe (2014), IDP documents, and field investigations, BPMs Social and Labour Plan identify the following key needs in the directly affected Project area. Numerous projects, that begin to address these areas of need, have been identified and will be implemented in terms of the commitments outlined in the SLP. These include:

- job creation;
- skills development in mining;
- small business development;
- water supply (specifically in Ledig);
- education infrastructure and equipment;
- improved health services and awareness raising of common diseases;
- housing and community halls;
- improved roads;
- sports and recreational facilities; and
- social and community services.

4 IMPACT ASSESSMENT AND PROPOSED MITIGATION

4.1 Introduction

The 2008 SIA, identified, described and assessed numerous socio-economic impacts. For each impact, a comprehensive list of mitigation measures was provided; these were drawn into the Environmental Management Programme, which was approved as a working document. As such, many of the potential impacts associated with these Project amendments have already been identified and are being managed and/ or mitigated. Therefore, this SIA draws out and discusses some of the impacts that may be exacerbated as a result of the longer construction timeframe, increased nuisance factors (noise, vibration, dust), and influx of job-seekers. The mitigation measures have largely been drawn from the existing EMP to ensure alignment and enable effective implementation (given that the mechanisms and systems may already be in place). Where additional measures were deemed appropriate, they have been added.

Water, noise, air quality, traffic and heritage specialist studies have been undertaken separately. Details of these studies have not been included in the social assessment; their findings have been used to inform selected impacts.

4.1.1 Potential Impacts Identified for the Project

As a result of the proposed Project activities and the nature of the surrounding socio-economic environment, the following potential impacts (see **Box 4-1**) have been identified and will be described and assessed in Section 4.2.1 to Section **Error! Reference source not found.**. A qualitative comment is provided on the potential cumulative impacts.

Box 4-1 **Socio-economic Impacts**

- Local Employment and Skills Development
- Benefits for the Local Economy
- Increased Social Ills Linked to Influx of Workers and Job-Seekers
- Increased Pressure on Infrastructure and Services
- Increased Nuisance Factors
- Disruption of Livelihood Activities

The mine footprint has already been defined and where additional land was required, it has been acquired (through various means) for the already authorised Project. With the exception of the tailings pipeline the activities that form part of this application all fall within the existing Project footprint and will largely generate a cumulative effect on most of the impacts already identified.

4.2 Socio-economic Impacts, Assessment and Mitigation

4.2.1 Local employment and Skills Development

4.2.1.1 Impact Description

Employment creation is the most anticipated positive impact of any project. Feedback from the surrounding communities (notably Ledig and Phatsima) and other stakeholders indicates that there are high expectations for jobs as a result of this Project. Given that this Project is merely the addition of new activities to an already authorised project, there will not be many new jobs created. During the construction phase, the employment benefit will occur as a result of the extended construction timeframe (an additional 3 years) to the existing construction phase. It is anticipated that approximately 300 jobs will be retained in Year 1 and an additional 270 jobs (total 570) will be retained in Year 2 and beyond. It is most likely that existing construction employees will be retained for the extended construction activities³⁹.

There are no new jobs created for the operational phase of the Project, which is expected to be ~23 years (mine closure in 2044).

The majority of the workforce will be employed indirectly via various construction contractors, approximately 91 people are employed directly by WPL. The minimum entry requirement for employment at BPM is Grade 10/ STD 8/ NGF level 1 and Grade 12 as of 2013, as such all employees are expected to be literate.

Induced employment opportunities will be created in the local area as a result of increased spending by the direct and indirect employees, as well as by the mine and appointed contractors. No figure has been calculated.

In terms of the existing Social and Labour Plan, BPM has committed to employ 30% of its workforce from the local communities; however, a skills audit (2011) identified a critical skills gap within the community. In order to address this gap, a skills transfer programme is being implemented during the construction phase.

In addition, there is a strategy to recruit experienced scarce skills locally and implement a training and development programme to ensure the mine reaches full production on time. As part of the training and development plan, BPM has appointed a Skills Development Facilitator, and plans to appoint a Learning and Development Manager – they will be responsible for driving skills development and training in accordance with the Workplace Skills Plan and Skills Development Plan. In order to achieve the goals of the Skills Development Plan, the following measures will be implemented:

³⁹ To date an Engineering, Procurement, and Construction Manager (EPCM) has not yet been appointed, as such workforce numbers cannot be provided. In the interim, it has been estimated that there will be ~300 construction workers in year 1, increasing to ~570 workers for the remaining construction period.

- literacy and numeracy plan (external), internal employees are required to be literate upon appointment);
- portable skills plan (external and limited internal);
- core business skills programmes (internal and limited external);
- apprenticeships and learnerships (aimed at local employees);
- bursary programmes (internal and external);
- mentorship programme (internal and external – individuals and Small Medium Micro Enterprises); and
- women in mining (minimum 15% target across all programmes and recruitment areas).

The development and implementation of the Human Resources Development Strategy aims to empower current and future employees with skills and competencies to achieve individual and organisational goals and personal development plans will be used to track individual progress against stated goals.

These activities, as outlined in the current SLP, must be extended to accommodate employees associated with this Project.

Table 4-1 Construction Impact: Employment and Skills Development

Socio-Economic Parameter	Employment and skills development
Issue/ Impact/ Nature	The benefit to the local economy will be positive , and direct via BPM employment and training and indirect via contractor employment, and induced employment in the local areas.
<u>S</u> everity	Severity will be low given the limited number of additional jobs created over the anticipated 3 year construction period.
<u>D</u> uration	Employment and skills development will be short-term as it will occur for an additional 3 years beyond the already authorised project's construction period. Therefore, the duration will be low .
Spatial Scale/ <u>E</u> xtent	It is most likely that jobs will be given to people from beyond the local boundaries given the identified skills shortage. However, a commitment has been made that 30% of the jobs will be local. As such, the extent will be medium . <i>Note: Professional judgement has been exercised to adjust the methodology to avoid a 'high' rating; for extent. For this impact, it is preferable to employ people locally therefore, a rating of 'high' would skew the significance rating.</i>
<u>C</u> onsequence (S+D+E)	LOW
<u>P</u> robability	It is unlikely (low) that employment and skills development will provide a significant benefit to the local population. The majority of jobs are likely to benefit people from outside the Project area.
Significance Rating (CxP)	Based on the above, there will be a LOW POSITIVE benefit in terms of local employment and skills development. The high levels of need in the local area will not be met and it is likely that expectations for employment will continue in the light of limited employment opportunities. It is likely that these unmet expectations will lead to increased levels of tension and possible unrest if not addressed. BPM must make every effort to enhance all opportunities to direct the benefits to the district and local municipal level.
Reversibility	Partially

Irreplaceable loss / enhancement of receptors	Possible. The SLP aims to maximise local employment opportunities through focused initiatives to develop local skills and provide suitable training. Career management is expected to enable employees to advance their careers.
Avoidable, manageable, mitigatable?	Mitigatable. Given the low skills base locally and the high levels of unemployment, it is unlikely that expectations regarding employment are going to be met. This will be the case, despite the comprehensive human resources development plan and the skills development initiatives. BPM must make every effort to implement all possible measures to enhance this impact.
Enhancement Measures	See Section 4.2.1.3
Post-Enhancement Significance Rating	Following enhancement, it is probable that the significance rating will remain LOW POSITIVE due to the low severity of this impact. It is important that BPM continue to implement all enhancement measures and commitments outlined in the SLP to aim to avoid increased levels of resentment due to unmet expectations.

During the operational phase, no additional employment and skills development opportunities are anticipated beyond those already identified and assessed as per the original EIA (2008). Given that there are no operational phase employment and skills development opportunities, there will equally be no decommissioning phase impact. When the construction phase jobs end, those employees will be equipped with some experience and training that may enable them to source alternate employment. It is possible that some employees may be retained by the construction contractors if they demonstrate skill, commitment and an ability to perform excellent work.

4.2.1.2 Impact Rating Summary

Unmitigated Impact						
Phase	Severity	Duration	Spatial Scale/ Extent	Consequence	Probability	Significance
Construction	L	L	M	L	L	LOW
Operation	-	-	-	-	-	-
Decommissioning	-	-	-	-	-	-
Mitigated Impact						
Construction	L	L	M	L	L	LOW
Operation	-	-	-	-	-	-
Decommissioning	-	-	-	-	-	-

4.2.1.3 Enhancement Measures

The objectives of enhancement are (as per the EMP, April 2008):

- To compile a clear and practical policy regarding labour recruitment and employment.
- Stipulate the preferential use of local labour as a requirement in all contracts.
- To provide skills development and capacity building for employees.

Enhancement measures are outlined below:

- Implement all Planning/ Design Phase and Construction Phase mitigation measures as outlined in the April 2008 EMP, Section 13.14.1.
- A grievance/ complaints register should be compiled and implemented in which all community and Interested and Affected Parties (I&AP) complaints are recorded and addressed.
- Periodic communication (annual at a minimum) and feedback should be undertaken to the community and I&APs in respect of the progress of the Project and the implementation of the EIA management plans.

4.2.2 Benefits for the Local Economy

4.2.2.1 Impact Description

WPL are proposing to increase the capacity of the concentrator plant to increase ore processing capabilities. The capacity of the concentrator plant will increase by ~15% per month. Thus, the production of platinum will increase leading to additional profit generation and other associated benefits. In addition to the employment benefits (discussed in Section 4.2.1), there are other activities that will benefit the local economy as a result of additional construction activities and the increase in processing and production capabilities. These benefits are outlined below.

- **Additional procurement of goods and services** during all Project phases: No detail is currently available regarding the type of services to be procured and the potential value of these contracts. It is most likely that specialist goods and services will be procured nationally, provincially, and internationally. Where possible BPM has committed to make use of local companies; the type of opportunities that may be provided to small medium and micro-sized enterprises (SMMEs) and locally-based emerging contractors include:
 - maintenance and repair work (fences, selected roads, plumbing and electrical);
 - security and transport services;
 - professional financial services to assist individuals and employees;
 - labour contractors; and
 - mechanisation contractors and input suppliers.
- **Potentially increased value of Bakubung baRatheo shareholding:** The *Bakubung baRatheo* community were originally made the largest shareholder in WPL. WPL wanted to ensure that the Bakubung received a tangible interest and became active participants (shareholders) in the company. Unfortunately, the Bakubung have lost much of their original shareholding as a result of financial mismanagement; this matter does not form part of the scope of this study and is a complex and unresolved situation⁴⁰. As a result of the increased ore processing capacity and thus the increased production of platinum, the value of the shareholding may increase.

⁴⁰ Last year the Ledig community experienced violent protests over investments, community leaders and service delivery matters. One of the key concerns of the community was the alleged mismanagement of approximately R527 million of tribal and community funds linked to the Trust.

- **Corporate Social Investment:** As part of the shareholder agreement, WPL made commitments to the Bakubung baRatheo community making it the sole investment vehicle for the community. These commitments included the establishment of the *Bakubung baRatheo* Non-Mining Economic Development Trust (the Trust) and the *Bakubung baRatheo* Economic Development Unit (EDU). To date, there has been a focus on directing benefits towards Ledig community. Phatsima has received relatively few of the local economic benefits.

The existing SLP (February 2015) is valid until the end of 2018. The scope and content of the plan will not be amended based on the additional activities associated with the Project. As such, the planned local economic development projects will continue despite the additional profit anticipated as a result of the increased processing and production capacity.

This impact will predominantly be associated with the operational and decommissioning phases of the Project. However, the benefits linked to procurement of goods and services will predominantly be experienced during the construction phase.

Decommissioning of BPM will lead to a withdrawal of the direct support of BPM in various local economic development (LED) projects. The intention of the Trust, EDU, LED projects, and capacity building amongst local businesses is to develop a more self-sufficient and therefore sustainable economy. It is not possible to assess the decommissioning phase impact given that there is little to no certainty as to how partner organisations and beneficiaries will adapt to, and take up the opportunity of becoming more self-sustaining. The SLP clearly outlines BPMs intention to do as much as possible to support the local community and assist them to stand alone in the future post mine closure. Processes relating to the management of downscaling and retrenchment will be undertaken in accordance with the commitments made in the SLP, such as the establishment of the Future Forum, the implementation of mechanisms to save jobs and to avoid job losses, and the development of portable skills that are in line with realistic work opportunities and the socio-economic needs of the region.

Table 4-2 Construction Impact: Local Economy

Socio-Economic Parameter	Local economy (local and district municipality)
Issue/ Impact/ Nature	The benefit to the local economy will be positive and direct .
<u>S</u> everity	Severity will be low , there will be some procurement benefits experienced during the construction phase.
<u>D</u> uration	Procurement will be short-term as it will occur for the 3 year construction phase. Therefore, the duration will be low .
Spatial Scale/ <u>E</u> xtent	This impact will be experienced at the local level, predominantly in the affected district and local municipalities. As such, the extent will be medium .
<u>C</u> onsequence (S+D+E)	LOW

Probability	It is unlikely (low) that the local economy will benefit significantly during the construction phase. The SLP clearly outlines BPMs commitment to ensure local benefits are achieved as far as possible. The construction phase is short and the number of suitably skilled local businesses are limited.
Significance Rating (CxP)	Based on the above, there will be a LOW POSITIVE benefit in terms of the local economy. The high levels of need in the local area will not be met and it is likely that expectations for further economic benefits will continue. It is likely that these unmet expectations will lead to increased levels of tension and possible unrest if not addressed. BPM must make every effort to enhance all opportunities to direct the benefits to the district and local municipal level.
Reversibility	Not
Irreplaceable loss / enhancement of receptors	Possible
Avoidable, manageable, mitigatable?	Mitigated. BPM must make every effort to implement all possible measures to enhance this impact to avoid resentment.
Enhancement Measures	See Section 4.2.2.3
Post-Enhancement Significance Rating	Following enhancement, it is probable that the significance rating will remain LOW POSITIVE due to the low severity of this impact. It is important that BPM continue to implement all enhancement measures and commitments outlined in the SLP to aim to avoid increased levels of resentment due to unmet expectations.

Table 4-3 Operation Impact: Local Economy

Socio-Economic Parameter	Local economy (local and district municipality)
Issue/ Impact/ Nature	The benefit to the local economy will be positive and direct .
Severity	Severity will be low . There will be limited additional procurement benefits associated with the new activities. An increased share value is possible but will be dependent on the market conditions. The local economic benefits identified in the 2008 SIA remain valid.
Duration	These benefits will be experienced for the life of mine; therefore, the duration will be medium .
Spatial Scale/ Extent	This impact will be experienced at the local level, predominantly in the affected district and local municipalities. As such, the extent will be medium .
Consequence (S+D+E)	LOW
Probability	It is unlikely (low) that the local economy will experience any additional benefits during the operational phase. Increase value of the Trust is possible but WPL have little control of the manner in which the funds are managed and spent. The SLP clearly outlines BPMs commitment to ensure local benefits are achieved as far as possible. <i>Note: Unfortunately, due to poor management of the original Trust funds, the Bakubung baRatheo have lost a significant amount of money; this has compromised the intended outcome. Should this lack of effective management continue, the intended positive impact will not be realised.</i>

Significance Rating (CxP)	Based on the above, there will be a LOW POSITIVE benefit in terms of the local economy. The high levels of need in the local area will not be met and it is likely that expectations for further economic benefits will continue. It is likely that these unmet expectations will lead to increased levels of tension and possible unrest if not addressed. BPM must make every effort to enhance all opportunities to direct the benefits to the district and local municipal level.
Reversibility	Not
Irreplaceable loss / enhancement of receptors	Possible
Avoidable, manageable, mitigatable?	Mitigatable. BPM must make every effort to implement all possible measures to enhance this impact to avoid resentment.
Enhancement Measures	See Section 4.2.2.3
Post-Enhancement Significance Rating	Following enhancement, it is probable that the significance rating will remain LOW POSITIVE due to the high level of need. It is important that BPM continue to implement all enhancement measures and commitments outlined in the SLP to aim to avoid increased levels of resentment due to unmet expectations.

4.2.2.2 Impact Rating Summary

Unmitigated Impact						
Phase	Severity	Duration	Spatial Scale/ Extent	Consequence	Probability	Significance
Construction	L	L	M	L	L	LOW
Operation	L	M	M	L	L	LOW
Decommissioning	-	-	-	-	-	-
Mitigated Impact						
Construction	L	L	M	L	L	LOW
Operation	L	M	M	L	L	LOW
Decommissioning	-	-	-	-	-	-

4.2.2.3 Enhancement Measures

The objectives of enhancement are (as per the EMP, April 2008):

- To compile a clear and practical policy regarding the preferred use of local SMMEs;
- Stipulate the use of local SMMEs as a requirement in all contracts;
- To provide skills development and capacity building of local communities;
- Establish linkages with BDM, MKLM and RLM to determine which areas of SMME expertise exist, and which can be used during construction and which during operation;
- Establish linkages with other mines in the area in order to benefit from existing SMME initiatives; and
- To minimise the effect of the closure of the mine on the nearby communities.

Enhancement measures are outlined below.

- Implement all mitigation measures as outlined in the April 2008 EMP, Section 13.14.2.
- Review all commitments outlined in the SLP and EMP, update to ensure that there is an increased benefit directed towards Phatsima. This should include meaningful interventions that promote long-term investment and expenditure in the community.
- All directly affected communities will be considered for corporate social investment initiatives. BPM to clearly define beneficiaries (notably Ledig and Phatsima). Specific initiative should be defined for these communities.
- WPL will continue to support the Bakubung baRatheo Non-Mining Economic Development Trust and the Bakubung baRatheo Economic Development Unit (EDU) sustainable development initiatives and monitor their effectiveness.
- All I&Ps should be informed of the commencement of the decommissioning phase and the date of mine closure on a regular basis.
- WPL must ensure that rehabilitation has taken place correctly, as stated in Section 13.17 of the SLP and according to legislation and the final end land users' requirements.

4.2.3 Increased Social Ills Linked to Influx of Workers and Job-Seekers

4.2.3.1 Impact Description

The construction and operation of a new mine in the Project area will result in influx of workers and job-seekers into the area. As a worst-case scenario, these changes can increase levels of crime/ theft, drug and alcohol abuse, increase the incidence of sex work, spread of sexually transmitted diseases (STDs), domestic violence, and general unrest due to increased competition. Project related influx will most likely have occurred as a result of the original project. The continuation of construction activities is unlikely to result in a second wave of influx as stakeholders will not differentiate the current approved activities from those linked to these infrastructure changes/ additions. Social ill's linked to the influx of workers and job-seekers have already been assessed as part of the original SIA; ie. increased health risks, further criminal activity, conflict and tension, and growth of informal settlements. As such, there is no need to reassess the impacts linked with influx in this SIA.

4.2.3.2 Mitigation Measures

Implement all mitigation measures as outlined in the April 2008 EMP, Sections 13.14.2, 13.14.4 and 13.14.6.

4.2.4 Increased Pressure on Infrastructure and Services

4.2.4.1 Impact Description

The additional worker housing that will be constructed as part of this Project (an additional 400 houses) is located within the existing mine footprint. All infrastructure and services associated with the additional

housing (eg. water, sewerage, electricity, waste removal) is being constructed and provided by BPM. As such, there will be no additional pressure on the already strained local infrastructure and services. By making provision to locate the workers on site and not in the surrounding areas, the pressure on traffic will also be alleviated. Post closure, the intention is for these houses to remain *in situ* and be used for future benefit.

Given that no further influx is anticipated, there will be no added pressure to the existing public infrastructure and services for any phase of the Project.

4.2.4.2 Mitigation Measures

In order to ensure that no additional pressure is added to the existing infrastructure and services, BPM must continue to implement all mitigation measures as outlined in the April 2008 EMP, Sections 13.14.2, and 13.14.4.

Worker accommodation (construction and operation phases) must comply with the standards of international best practice; ie. *Workers Accommodation Processes and Standards: A Guidance Note by IFC and EBRD (2009)*.

4.2.5 Increased Nuisance Factors

4.2.5.1 Impact Description

As a result of the proposed Project activities, there will be an increase in the noise, dust, traffic and visual impacts of the overall facility. Most notably, the TSF will increase in size by approximately 17%, an ore crusher circuit will be located on the surface, the capacity of the mine product stockpiles will increase, a tailings and return water pipeline will lie across the surface for ~2km between the already approved mine site and the TSF site, and an additional 400 housing units will be constructed. These activities, amongst others will generate additional noise impacts, increased levels of dust, lead to higher volumes of traffic, and greater visual intrusions. For details of these impacts, refer to the Noise, Air Quality, Traffic and Visual Impact Assessments⁴¹ in the EIA Report.

These impacts, while still within acceptable limits (post mitigation)⁴², will increase the ambient noise and air quality in the area. The higher traffic volume will create safety risks for other vehicles, pedestrians and livestock throughout the immediate vicinity and to a lesser extent the whole Project area. The nuisance impacts will primarily be experienced by the residents of Ledig and Phatsima, as well as workers in the area and travellers on the surrounding roads (some of whom are tourists visiting facilities in the area, specifically Sun City).

⁴¹ The visual impact assessments will be incorporated into the EIA, no stand alone report will be compiled.

⁴² According to the Noise, Air Quality, Traffic and Visual Assessments undertaken for this EIA process In 2016.

The area is already highly disturbed and marked by agriculture, and other industrial developments, notably mines. These nuisance factors are likely to further degrade the sense of place and potentially affect quality of life for some people. During the construction and operational phases, the noise and dust levels may also affect livestock and crops in the immediate vicinity. Despite the anticipated increase of these nuisance factors, it is likely that tourism will continue as it has done despite the increased mining activity over recent time.

During the estimated 3-year construction phase the contractors will provide necessary facilities, including staff accommodation, at a site located off the mine site, to be chosen and managed by the contractors. These facilities will be removed after completion of construction.

Table 4-4 Construction Impact: Increased nuisance factors

Socio-Economic Parameter	Increased nuisance factors resulting from additional noise, dust, traffic and visual factors.
Issue/ Impact/ Nature	The increased nuisance factors will be negative , and direct as a result of additional Project activities; eg. Construction vehicles and equipment, construction work, construction personnel.
<u>S</u> everity	Severity will be medium given the close proximity of Ledig, Phatsima, and Sun City.
<u>D</u> uration	The disruption will be experienced for the full construction phase (short-term); therefore, the duration will be low .
Spatial Scale/ <u>E</u> xtent	The impact will occur on site and within relatively close proximity to the site. As such, the extent will be low .
<u>C</u> onsequence (S+D+E)	LOW
<u>P</u> robability	It is possible (medium) that construction generate nuisance factors that will negatively impact on stakeholders in close proximity to the site.
Significance Rating (CxP)	Based on the above, there will be a MEDIUM NEGATIVE impact in terms of an increase in nuisance factors.
Reversibility	Partially
Irreplaceable loss / enhancement of receptors	Unlikely
Avoidable, manageable, mitigatable?	Mitigatable
Enhancement Measures	See Section 4.2.5.3
Post-Mitigation Significance Rating	Following mitigation, it is possible that the significance rating will be reduced slightly due to a reduction in severity but will remain one of MEDIUM NEGATIVE significance; the construction activities must take place and the sensitive receptors cannot be relocated.

Table 4-5 Operation Impact: Increased nuisance factors

Socio-Economic Parameter	Increased nuisance factors resulting from additional noise, dust, traffic and visual factors.
Issue/ Impact/ Nature	The increased nuisance factors will be negative , and direct as a result of additional Project activities; eg. Ore crusher circuit, increased capacity TSF, increased capacity stock piles, operations personnel.
<u>S</u> everity	Severity will be high given the close proximity of Ledig, Phatsima, and Sun City.
<u>D</u> uration	The disruption will be experienced for the operational phase (long-term); therefore, the duration will be medium .
Spatial Scale/ <u>E</u> xtent	The impact will occur beyond the site boundary, notably the air quality, traffic and visual impacts. As such, the extent will be medium .
<u>C</u> onsequence (S+D+E)	MEDIUM
<u>P</u> robability	It is definite (high) that the operational activities will generate nuisance factors that will negatively impact sensitive receptors surrounding the site (eg. Residents, schools, clinics, tourists).
Significance Rating (CxP)	Based on the above, there will be a MEDIUM NEGATIVE impact in terms of an increase in nuisance factors during the operational phase.
Reversibility	Partially
Irreplaceable loss / enhancement of receptors	Unlikely
Avoidable, manageable, mitigatable?	Mitigatable
Enhancement Measures	See Section 4.2.5.3
Post-Mitigation Significance Rating	Following mitigation, it is possible that the significance rating will be reduced slightly due to a reduction in severity but it will remain one of MEDIUM NEGATIVE significance given that the operational activities will remain relatively loud, dust will be generated, traffic will be created and the visual impact cannot be avoided. Sensitive receptors remain in very close proximity to the site.

During the decommissioning phase, this negative impact will be largely mitigated with the removal of mine infrastructure and rehabilitation of the land. The large TSF will remain, as such the visual impact will remain, albeit under rehabilitation. Decommissioning has not been assessed, however it does require mitigation to rehabilitate the land as far as possible.

4.2.5.2 Impact Rating Summary

Unmitigated Impact						
Phase	<u>S</u> everity	<u>D</u> uration	Spatial Scale/ <u>E</u> xtent	<u>C</u> onsequence	<u>P</u> robability	Significance
Construction	M	L	L	L	M	M
Operation	H	M	M	M	H	M

Decommissioning	-	-	-	-	-	-
Mitigated Impact						
Construction	L	L	L	L	M	M
Operation	M	M	M	M	H	M
Decommissioning	-	-	-	-	-	-

4.2.5.3 Mitigation Measures

The objectives of mitigation are:

- To minimise all nuisance factors such as noise, air quality, traffic, and visual.
- To liaise openly and frequently with affected stakeholders to ensure they have information about activities that will generate nuisance factors.
- To make available, maintain and effectively implement a grievance/complaints register that is easily accessible to all neighbours and affected stakeholders.

Mitigation measures are outlined below.

- Implement all mitigation measures as specified in the relevant 2016 specialist inputs, namely:
 - noise impact assessment;
 - air quality impact assessment;
 - traffic impact assessment; and
 - visual impact assessment in the EIA..
- A grievance/complaints register should be compiled and implemented in which all community and I&AP complaints are recorded and addressed.
- Periodic communication (annual at a minimum) and feedback should be undertaken to the affected communities and stakeholders in respect of the activities that will generate nuisance factors.

4.2.6 Disruption of Livelihood Activities

4.2.6.1 Impact Description

A surface tailings pipeline and return water pipeline will be constructed to transport the tailings from the mine plant area to the TSF for deposition; this is essential infrastructure which is needed for the functioning of the mine. The proposed pipeline route was selected, amongst a number of alternatives, to minimise social and environmental impacts, as well as a number of technical considerations. The pipeline crosses the Remainder of Farm Frischgewaagd Portion 96 JQ and a part of the Remainder of Portion 4 of Farm Frischgewaagd 96 JQ. These farm portions form part of the *Bakubung baRatheo* Traditional Authority Area and is therefore a communal resource of the Bakubung. The pipeline route traversing these two mentioned properties is ~2km long (total pipeline route is ~4km). The pipeline will be placed on the surface with plinths and will have a diameter of 300mm, and the return water pipe is 150mm. A 30m wide servitude (pipelines on the centreline with 15m on either side) will be cleared of

vegetation and other obstructions (and kept clear during the construction and operations phases for maintenance). The servitude will accommodate the pipelines, an access road and a powerline. In total, this will have an impact on ~6ha. Wesizwe is in the process of negotiating the necessary permission from the Traditional Authority for the pipeline to be constructed and operated over the Bakubung baRatheo's land.

The land is used for livestock grazing (predominantly cattle), gathering of firewood; fishing in the river, hunting and the collection of medicinal plants⁴³. The area has been over-utilised resulting in very little, if any, visible plant life leading to large tracts of exposed soil in some areas of the affected land. The majority of people making use of the land in question are male; boys between the ages of ~10 and ~18, who are livestock herders, and older men (and some young boys) have been seen fishing⁴⁴. There are clear footpaths evident throughout the affected area, probably used by community members and livestock.

As part of the original project, BPM have already fenced the mine shaft and plant area and the TSF site. WPL were granted the surface right to the mine plant area by the Bakubung baRatheo tribal authority; as part of that agreement, 9 cattle owners lost grazing land for which compensation was negotiated and agreed with the tribal authorities and affected parties. WPL own the land where the TSF is located (which they purchased from the RLM); there is an informal verbal agreement with the land users that until such time as construction of the TSF commences, the fenced area may be used for grazing. Allocating alternative grazing land for the farmers falls within the responsibility of the RLM and not WPL.

The construction of the pipeline could result in the restriction of movement of community members and livestock. Therefore land use practices in this area may be hindered to a greater or a lesser extent, dependent on the management measures to mitigate this impact.

In **Figure 4-1**, it is illustrated that the proposed pipeline route effectively bisects Farm Frischgewaagd Portion 96 JQ. Given the already constrained state of Bakubung baRatheo communal grazing, and grazing in the local municipalities, hindered access could have further impact on grazing, as well as other livelihood activities.

⁴³ Observation on site, December 2015.

⁴⁴ Observation on site, December 2015.

Figure 4-1 Tailings pipeline route over affected farm portions

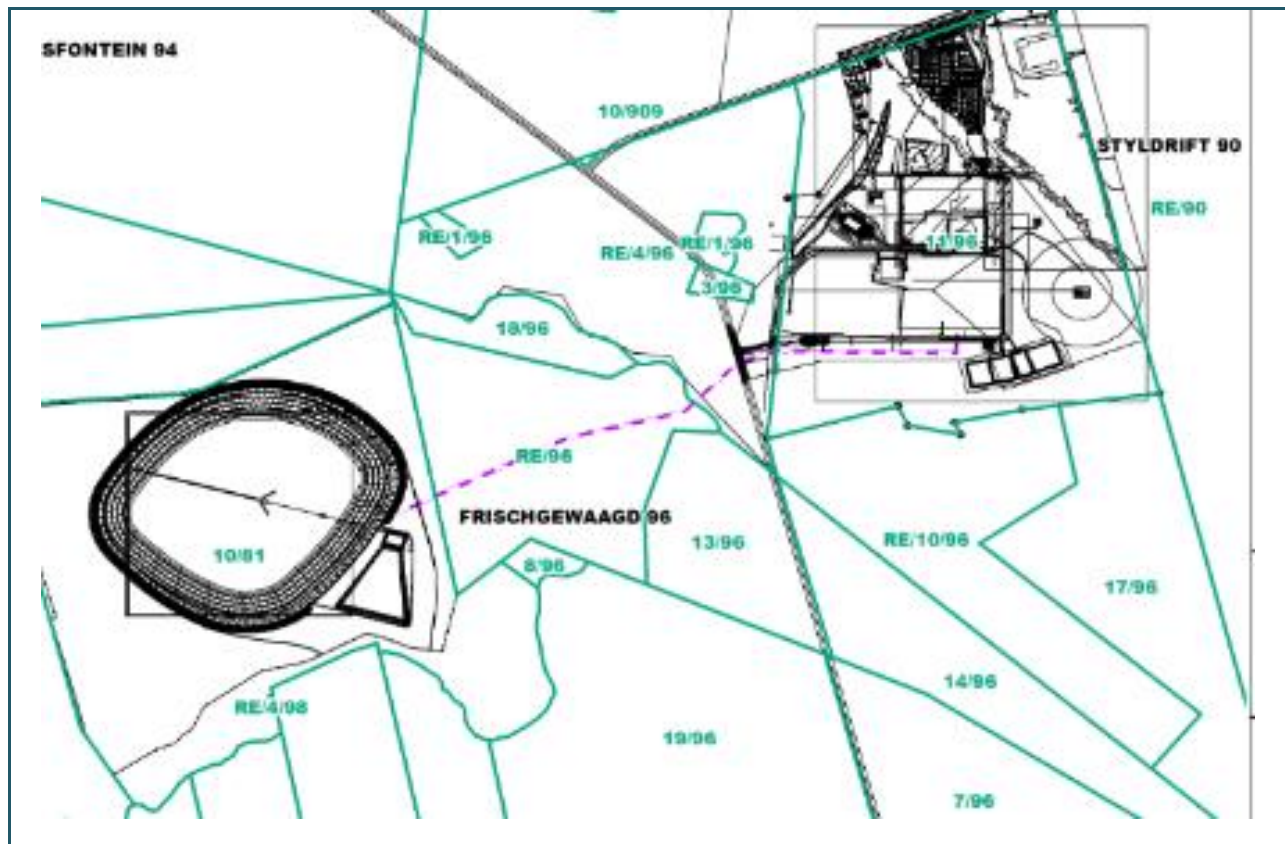


Table 4-6 Construction Impact: Disruption of livelihood activities

Socio-Economic Parameter	Disruption to livelihood activities including livestock grazing, collection of firewood, fishing, hunting and commuter/ livestock traversing routes
Issue/ Impact/ Nature	The disruption to livelihood activities will be negative , and direct as a result of the proposed tailings surface pipeline and the presence of construction staff, plant and equipment, bisecting a portion of traditional authority land.
Severity	Severity will be medium given the limited availability of communal land for grazing and other livelihood activities, however people will be able to move freely across the pipelines.
Duration	The disruption will be experienced for the full construction phase (short-term); therefore, the duration will be low .
Spatial Scale/ Extent	The impact is localised to one land portion of Farm Frischgewaagd. As such, the extent will be low .
Consequence (S+D+E)	LOW
Probability	It is definite (high) that construction of the tailings pipeline will disrupt land use activities and livestock traversing routes.
Significance Rating (CxP)	Based on the above, there will be a MEDIUM NEGATIVE impact in terms of disruption to livelihood activities, most notably grazing.

Reversibility	Fully
Irreplaceable loss / enhancement of receptors	Unlikely
Avoidable, manageable, mitigatable?	Manageable and mitigatable.
Enhancement Measures	See Section 4.2.6.3
Post-Mitigation Significance Rating	Following mitigation, it is probable that the significance rating will be reduced to one of <u>LOW NEGATIVE</u> significance.

Table 4-7 Operation Impact: Disruption of livelihood activities

Socio-Economic Parameter	Disruption to livelihood activities including livestock grazing, collection of firewood, fishing, hunting and traversing routes of community members and livestock.
Issue/ Impact/ Nature	The disruption to livelihood activities will be negative , and direct as a result of the proposed tailings surface pipeline bisecting a portion of traditional authority land.
<u>S</u> everity	Severity will be medium given the limited availability of communal land for grazing and other livelihood activities, however people will be able to move freely across the pipelines.
<u>D</u> uration	The disruption will be experienced for the full life of mine (long-term); therefore, the duration will be medium .
Spatial Scale/ <u>E</u> xtent	The impact will only occur on a part of the Remainder of Farm Frischgewaagd Portion 96 JQ. As such, the extent will be low .
<u>C</u> onsequence (S+D+E)	MEDIUM
<u>P</u> robability	It is definite (high) that operation of the tailings pipeline will disrupt all livelihood activities practiced on the site.
Significance Rating (CxP)	Based on the above, there will be a <u>MEDIUM NEGATIVE</u> impact in terms of disruption to livelihood activities, most notably grazing.
Reversibility	Fully
Irreplaceable loss / enhancement of receptors	Unlikely
Avoidable, manageable, mitigatable?	Manageable and mitigatable.
Enhancement Measures	See Section 4.2.6.3
Post-Mitigation Significance Rating	Following mitigation, it is probable that the significance rating will be reduced to one of <u>LOW NEGATIVE</u> significance.

During the decommissioning phase, this negative impact will be fully mitigated with the removal of the tailings pipeline and rehabilitation of the land. All activities will be able to recommence; without any obstruction there will be free movement over the entire farm portion. Decommissioning has not been assessed; however it does require mitigation to restore the land to its pre-construction state.

4.2.6.2 Impact Rating Summary

Unmitigated Impact						
Phase	Severity	Duration	Spatial Scale/ Extent	Consequence	Probability	Significance
Construction	M	L	L	L	H	M
Operation	M	M	L	M	H	M
Decommissioning	-	-	-	-	-	-
Mitigated Impact						
Construction	L	L	L	L	L	L
Operation	L	M	L	L	L	L
Decommissioning	-	-	-	-	-	-

4.2.6.3 Mitigation Measures

The objectives of mitigation are:

- To avoid disruption of existing land use patterns and livelihood activities on the Remainder Portion Farm Frischgewaagd 96 JQ and the Remainder of Portion 4 of Farm Frischgewaagd 96 JQ. Where avoidance is not possible, minimise all disruption as far as reasonably possible without impacting on project design.
- If required, provide fair and just mitigation for the disruption of livelihood activities with input from the Traditional Authority. Include natural resource users such as livestock owners and other natural resources users in the mitigation discussion to ensure that their views are incorporated into the final measures.

Management measures are outlined below.

- Construction staff, plant and equipment:
 - All construction staff will agree to a Code of Conduct (CoC) that outlines protocols and standards for working on the affected land. The CoC should address the following:
 - respect for local residents;
 - respect for existing livelihood activities and the environment;
 - no hunting, snaring or unauthorised taking of any property belonging to someone else;
 - compliance with the Traffic Management Plan and all associated regulations;
 - unambiguous disciplinary measures for not adhering to the Code of Conduct.
 - Community members / affected land users will be able to lodge grievances with BPM using the existing grievance procedure. In the event that the grievance is not addressed or closed out properly, there should be an avenue through which the matter is escalated to a higher level of authority within BPM.

- BPM and the Bakubung baRatheo Traditional Authority will discuss appropriate mitigation measures including methods and procedures to minimise the disruption to land use patterns and livelihood activities. This will include, fencing off the construction site to ensure that community members and livestock do not get injured due to construction activities and providing access points (both during construction and during operations and maintenance) across, over or under the pipeline to ensure unhindered movement for pedestrian and livestock as well as a clear and simple claim mechanism in the event of proven damage to property by the contractor.
 - Compliance with relevant mitigation measures as outlined in the noise, air quality, and heritage assessments.
- Pipeline crossings:
 - Identify and confirm all affected land uses and land user groups with input from the Bakubung baRatheo Traditional Authority.
 - Consider all possible measures to enable convenient and safe pedestrian and livestock crossing of the construction site and the pipeline, post construction. These may include providing overpasses and underpasses at regular intervals or in designated locations along the pipeline route.
 - Together with the Bakubung baRatheo Traditional Authority and affected land user groups identify practical and cost-effective engineering solution to cross the construction site and the pipelines.
 - The pipelines should not be fenced during operations as this will completely prevent all pedestrian and livestock from crossing.
- If required:
 - Hold discussions with the Traditional Authority to confirm that they are in agreement that all livelihoods activities can proceed unhindered. Should they raise concerns, these should be defined and investigated, suitable mitigation should be agreed.
 - Update Wesizwe’s “Grazing Compensation Assessment Procedure”. Implement as and when required.
 - A practical and cost effective yet fair agreement should be reached between all parties. Possible mitigation measures may therefore include the construction of overpasses and underpasses at designated locations along the pipeline route or pursuing other options as detailed in the procedure⁴⁵.
 - Mitigation measures should be approached in accordance with the principles of the International Finance Corporation’s Performance Standard 5 on Land Acquisition and Involuntary Resettlement (IFC PS5, 2012), namely to achieve fair compensation that will not leave affected parties worse off than their position pre-project intervention.

⁴⁵ Should the pipeline prohibit livestock movement to the extent that livelihoods are compromised, Wesizwe should enhance/ extend the Bakubung baRatheo Farming Project to provide opportunities for the affected people.

4.2.7 Cumulative Impacts

The cumulative socio-economic impacts resulting from this Project will be limited. The majority of impacts were identified in the 2008 SIA for the BPM; those were assessed and appropriate mitigation and management measures were proposed. It is unlikely that the additions/ changes to project activities within the authorised mine footprint will exacerbate the socio-economic impacts further.

There are only 2 notable impacts that may result in marginal cumulative impacts; they are:

- increased nuisance factors (noise, dust, traffic and visual disturbances); and
- further disruption to livelihood activities resulting from the surface tailings and return water pipelines that is proposed to cross communal land primarily used for grazing.

The increase in nuisance factors is expected to remain within acceptable limits, suitable mitigation measures have been proposed to reduce and manage these nuisance factors as far as reasonably possible. Grazing land in the MKLM is already under strain, it is unlikely that replacement land can be sourced; as such, it is important that suitable management/ mitigation measures are implemented to ensure that the surface pipeline does not restrict grazing on the affected farm portions.

4.2.7.1 Mitigation Measures

In addition to the mitigation measures described above, BPM must continue to:

- implement all mitigation measures as outlined in the Environmental Impact Assessment and Environmental Management Program for Bakubung Platinum Mine and Associated Infrastructure, April 2008.

5 CONCLUSION

The application by WPL for the additional project activities at BPM (this Project) should be given due consideration in light of the already approved Platinum Mine. In order for BPM to operate efficiently it requires that the additional infrastructure be approved, as proposed by this application.

The already authorised BPM will have more significant socio-economic impacts than the proposed Project activities; there are no significant negative (or positive) socio-economic impacts associated with this Project. The proposed activities are relatively small in scale and will have a marginal cumulative impact on the socio-economic environment. The most significant impacts are the increased nuisance factors (noise, dust, traffic and visual) and impact on livelihood activities (specifically grazing); both of which are manageable and can largely be mitigated. No further influx is anticipated beyond that identified and assessed for the original project. As such there should be no increase in social ills (eg. crime, spread of HIV and STIs), and no extra pressure on the already strained infrastructure and services (eg. housing, water, sanitation, electricity, refuse removal). **Table 5-1** and **Table 5-2** provide a summary of the impact ratings for the impacts identified for the construction, operation and decommissioning phases.

The socio-economic impacts associated with the proposed Project are considered to be acceptable in the context of the receiving environment and given that the Bakubung Platinum Mine has already been authorised. The relative levels of significance of the negative impacts (and the positive economic impacts) are low.

In addition to the mitigation measures described in this SIA, BPM must continue to implement all mitigation measures as outlined in the Environmental Impact Assessment and Environmental Management Program for Bakubung Platinum Mine and Associated Infrastructure, April 2008.

If the above-mentioned mitigation measures are agreed, it is the reasoned opinion of the Social Specialist that the proposed Project should be authorised.

Table 5-1 Pre-mitigation assessment summary

Potential impact	Alternative	Project phases	Consequence			Probability	Significance	Degree to which impact			
			Severity	Duration	Spatial scale / Extent			Can be reversed	Causes irreplaceable loss of resources	Can be avoided/ Managed/ Mitigated	
Employment and Skills Development	1	Construction	L	L	M	L	L	Not	Possible	Mitigatable	
		Operation	N/A								
		Decommissioning	N/A								
Benefits for the Local Economy	1	Construction	L	L	M	L	L	Not	Possible	Mitigatable	
		Operation	L	M	M	L	L	Not	Possible	Mitigatable	
		Decommissioning	N/A								
Increased Social Ills Linked to Influx of Workers and Job-Seekers	1	Construction	Not applicable to this Project given no further employment or influx anticipated								
		Operation									
		Decommissioning									
Increased Pressure on Infrastructure and Services	1	Construction	Not applicable to this Project given no further employment or influx anticipated								
		Operation									
		Decommissioning									
Increased Nuisance Factors	1	Construction	M	L	L	M	M	Partially	Unlikely	Mitigatable.	
		Operation	H	M	M	H	M	Partially	Unlikely	Mitigatable.	
		Decommissioning	N/A								
Disruption to Livelihood Activities	1	Construction	M	L	L	H	M	Fully	Unlikely	Manageable and mitigatable.	
		Operation	M	M	L	H	M	Fully	Unlikely	Manageable and mitigatable.	
		Decommissioning	N/A								

Table 5-2 Post-mitigation assessment summary

Potential impact	Alternative	Project phases	Consequence			Probability	Significance	Degree to which impact			
			Severity	Duration	Spatial scale / Extent			Can be reversed	Causes irreplaceable loss of resources	Can be avoided/ Managed/ Mitigated	
Employment and Skills Development	1	Construction	L	L	M	L	L	Not	Possible	Mitigatable	
		Operation	N/A								
		Decommissioning	N/A								
Benefits for the Local Economy	1	Construction	L	L	M	L	L	Not	Possible	Mitigatable	
		Operation	L	M	M	L	L	Not	Possible	Mitigatable	
		Decommissioning	N/A								
Increased Social Ills Linked to Influx of Workers and Job-Seekers	1	Construction	Not applicable to this Project given no further employment or influx anticipated								
		Operation									
		Decommissioning									
Increased Pressure on Infrastructure and Services	1	Construction	Not applicable to this Project given no further employment or influx anticipated								
		Operation									
		Decommissioning									
Increased Nuisance Factors	1	Construction	L	L	L	M	M	Partially	Unlikely	Mitigatable.	
		Operation	M	M	M	H	M	Partially	Unlikely	Mitigatable.	
		Decommissioning	N/A								
Disruption to Livelihood Activities	1	Construction	L	L	L	L	L	Fully	Unlikely	Manageable and mitigatable.	
		Operation	L	M	L	L	L	Fully	Unlikely	Manageable and mitigatable.	
		Decommissioning	N/A								

6 REFERENCES

Bojanala Platinum District Municipality: 3rd Generation Integrated Development Plan, 2012-2017.

International Finance Corporation. IFC Performance Standards on Environmental and Social Sustainability: Performance Standard 5. Effective January 1, 2012.

International Finance Corporation and European Bank for Reconstruction and Development, 2009, Workers Accommodation Processes and Standards: A Guidance Note by IFC and EBRD.

Moses Kotane Local Municipality, Integrated Development Plan Review 2014/2015.

North West Development Corporation, Invest in North West: the heartbeat of trade, investment and economic growth. No date. Sourced: www.nwdc.co.za on 18/01/2016.

Rustenburg Local Municipality, 3rd Generation Integrated Development Plan, 2012-2017.

Statistics South Africa, Census Data, 2011.

Wesizwe Platinum Limited, Environmental Impact Assessment and Environmental Management Program for a Platinum Mine and Associated Infrastructure, April 2008.

Wesizwe Platinum Limited, Social Impact Assessment: Final Report, April 2008. Compiled by Perisseuo Consulting cc.

Wesizwe Platinum Limited, 2014 Stakeholder Perception Survey: Final Results Report, January 2015. Compiled by G3

6.1 Interviews

Mr Hamlet Morule: Executive Corporate Affairs Manager – 17 December 2015

Mr Lion Phasa: Social and Labour Plan Manager - 9 December 2015

Ms Kgomotso Tshaka: Sustainability Executive – 1 December 2015

Site observation, December 2015

7 ANNEX A: SPECIALIST DETAILS AND DECLARATION OF INDEPENDENCE

7.1 Primary Author: Kerryn McKune Desai

Kerryn offers fourteen years of experience in the fields of socio-economic development and social performance in corporate, non-profit and academic environments. My social capabilities draw on my in-depth knowledge of the International Finance Corporation (IFC) Performance Standards in order to provide the following key offerings:


- review and assessment of existing and planned social programmes at both the corporate and operational levels;
- review/ gap analyses of existing reports and management plans;
- social risk identification and assessment;
- resettlement planning and reviews;
- social impact assessment and peer review;
- auditing of social and labour/ working conditions;
- development and facilitation of training and capacity building;
- stakeholder engagement planning and implementation; and
- qualitative research and analysis.

I have diverse sector expertise, with specific focus in the mining, oil and gas, and power/ renewable energy sectors. I have worked throughout Africa, including South Africa, Botswana, Uganda, Cameroon, Ghana, Nigeria, Tanzania, Guinea, Zambia, São Tomé and Príncipe, Mozambique, as well as in Albania and Turkey.

I will continue to use my skills and experience to support companies and projects to plan for and manage their challenging socio-economic environments and the associated risks. The anticipated outcome would be to build trust based on best practice and a positive reputation, and the attainment of a regulatory and social license to operate.

7.1.1 Declaration of Independence

I, Kerryn McKune Desai, author of this report, hereby declare that I am an independent consultant. I compiled the report based on impartial research and analysis of the proposed project. I confirm that I have no business, financial, personal or other interest in the activity or application in respect of which I have been involved.



Kerryn McKune Desai

7.2 Reviewer: Liza van der Merwe

Liza van der Merwe has 28 years' experience both as specialist social and resettlement consultant as well as project implementer and developer.

She has a pragmatic approach to resettlement and believes that sustainable outcomes in resettlement can only be achieved where both the client and project affected communities have a shared responsibility to achieving long term success with resettlement activities rather than only focussing on short term gains (in assets and resources).

She acknowledges and appreciates the importance of in-country legislation, local dynamics and land tenure systems as well as traditional authority structures and systems within which social process particularly resettlement and compensation processes needs to occur.

Liza believes that the critical challenge is to plan, measure and implement projects against international resettlement and compensation practise and standards as required by international funding and lending institutions but at the same time ensuring that local economic and social systems and livelihoods are not only maintained but enhanced.

She provides specialist land acquisition and resettlement support during the environmental and social impact assessment process to ensure sustainable and practicable resettlement and compensation measures and models.

In recent years Liza focussed her attention on developing land acquisition, resettlement and compensation strategies on mega-infrastructure projects for clients in mining, petroleum and water supply industries in South Africa. Her approach is characterised by integrated objectives based planning and implementation within the broader project context.

8 ANNEX B: IMPACT ASSESSMENT METHODOLOGY

Impact assessment methodology as provided by SLR.

8.1 Determination of Significance of Impacts

Significance is determined through a synthesis of impact characteristics which include context and intensity of an impact. Context refers to the geographical scale i.e. site, local, national or global whereas intensity is defined by the severity of the impact e.g. the magnitude of deviation from background conditions, the size of the area affected, the duration of the impact and the overall probability of occurrence.

Significance is an indication of the importance of the impact in terms of both physical extent and time scale, and therefore indicates the level of mitigation required. The total number of points scored for each impact indicates the level of significance of the impact.

8.2 Impact Rating System

The proposed method for the assessment of environmental issues is set out in the Table 8-5. This assessment methodology enables the assessment of environmental issues including:

- the severity of impacts (including the nature of impacts and the degree to which impacts may cause irreplaceable loss of resources),
- the extent of the impacts,
- the duration and reversibility of impacts,
- the probability of the impact occurring, and
- the degree to which the impacts can be mitigated.

Table 8-1 Criteria for assessing impacts

Note: Part A provides the definition for determining impact consequence (combining severity, spatial scale and duration) and impact significance (the overall rating of the impact). Impact consequence and significance are determined from Part B and C. The interpretation of the impact significance is given in Part D.

PART A: DEFINITION AND CRITERIA*		
Definition of SIGNIFICANCE	Significance = consequence x probability	
Definition of CONSEQUENCE	Consequence is a function of severity, spatial extent and duration	
Criteria for ranking of the SEVERITY of environmental impacts	H	Substantial deterioration (death, illness or injury). Recommended level will often be violated. Vigorous community action.
	M	Moderate/ measurable deterioration (discomfort). Recommended level will occasionally be violated. Widespread complaints.
	L	Minor deterioration (nuisance or minor deterioration). Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.

	L+	Minor improvement. Change not measurable/ will remain in the current range. Recommended level will never be violated. Sporadic complaints.
	M+	Moderate improvement. Will be within or better than the recommended level. No observed reaction.
	H+	Substantial improvement. Will be within or better than the recommended level. Favourable publicity.
Criteria for ranking the DURATION of impacts	L	Quickly reversible. Less than the project life. Short term
	M	Reversible over time. Life of the project. Medium term
	H	Permanent. Beyond closure. Long term.
Criteria for ranking the SPATIAL SCALE of impacts	L	Localised - Within the site boundary.
	M	Fairly widespread – Beyond the site boundary. Local
	H	Widespread – Far beyond site boundary. Regional/ national

PART B: DETERMINING CONSEQUENCE

SEVERITY = L

DURATION	Long term	H	Medium	Medium	Medium
	Medium term	M	Low	Low	Medium
	Short term	L	Low	Low	Medium

SEVERITY = M

DURATION	Long term	H	Medium	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Low	Medium	Medium

SEVERITY = H

DURATION	Long term	H	High	High	High
	Medium term	M	Medium	Medium	High
	Short term	L	Medium	Medium	High
			L	M	H

	Localised Within site boundary Site	Fairly widespread Beyond site boundary Local	Widespread Far beyond site boundary Regional/ national
--	--	---	---

SPATIAL SCALE

PART C: DETERMINING SIGNIFICANCE

PROBABILITY (of exposure to impacts)	Definite/ Continuous	H	Medium	Medium	High
	Possible/ frequent	M	Medium	Medium	High
	Unlikely/ seldom	L	Low	Low	Medium

	L	M	H
--	----------	----------	----------

CONSEQUENCE

PART D: INTERPRETATION OF SIGNIFICANCE

Significance	Decision guideline
High	It would influence the decision regardless of any possible mitigation.
Medium	It should have an influence on the decision unless it is mitigated.
Low	It will not have an influence on the decision.