Proposed extension of the ash disposal facilities at Camden power station

Social Impact Assessment

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EXECUTIVE SUMMARY

Eskom is currently operating the Camden Power Station as part of its electricity generation fleet. Throughout the operational life of the power station, ash is being generated at the station. The ash is being disposed of at an authorised ash disposal site within the Camden Power Station premises. The current ash disposal site is reaching the end of its capacity, and it is anticipated that a new ash disposal facility will be required by approximately mid 2014. In order to establish a new ash disposal facility within close proximity to the power station, a site selection exercise was undertaken.

The site alternatives for the proposed project are located at the existing Camden Power Station approximately 12 km outside the town of Ermelo in the Mpumalanga Province. The area is in the boundaries of the Msukaligwa Local Municipality in the Gert Sibande District Municipality. It is a rural area with high levels of unemployment and poverty.

There are a number of key stakeholders in the project. The farming community can be divided in three groups. The first group is the people who own the affected properties and make a living from the properties – either by rental income or income earned by actively working the land. The second group is the people who rent the affected properties and work the land to supplement their income. The last group is the people who work and live on the farm – the farm workers and their families. There are still some people residing in Camden Village. The village was sold to the SANDF when the plant was mothballed in 1989. The greater Ermelo Community represent the people who live in town and in smaller communities around the area. The employees of Camden Power Station represent the approximately 242 current employees at the power station.

Impacts has been assessed in the following phases of the project:

- Status Quo

  To maintain the status quo no new ash disposal facility should be constructed. This will take the Camden Power Station out of operation and impact on a national level and on the livelihoods of the existing employees.

- Pre-construction

  The pre-construction phase is the phase in which the EIA is conducted. This is usually when the proposed project is announced in the public domain. Uncertainty and expectations are the most significant impacts that will be experienced in this phase.

- Construction

Most of the impacts will be experienced in the construction phase. This is the phase when there will be an influx of people in the area looking for employment, and impacts such as HIV/AIDS, prostitution and safety are associated with this influx. There will be additional traffic and construction activities will create dust, noise and other environmental nuisances that may impact on mental or physical health. Only the chosen site will be affected and the affected party will loose access to the land that will impact on his livelihood. Although most of the impacts in this phase are temporary, it is usually experienced as quite severe.

- Operation

The operational phase is the phase of the project where the ash disposal facility becomes operational. Given the fact that Camden Power Station is an existing facility, many of the impacts are experienced already. Most important impacts are economic – job retention is the most important. There will also be environmental impacts that may be either a nuisance or a health risk.

Based on the SIA the following general recommendations are made:

- Compile and implement a community relations strategy;
- Appoint a community liaison officer to assist with management of social impacts and dealing with community issues;
- Consult with the directly affected communities and note special concerns;
- Install proper grievance and communication systems;
- Employ and procure locally as far as possible;
- Honour existing lease agreements or resolve to satisfaction of all parties involved;
- Make sure construction teams can be identified easily; and
- Make monitoring activities part of the Safety, Health and Environmental systems.

Three alternative sites were analysed, and all alternatives will have a negative economic impact on the affected user should it be chosen. The recommendation of the most preferred alternative form a social perspective is based on the following:

- Number of people whose livelihoods to be affected;

- Cultural and emotional attachment to the land and aspirations for the future; and
- Impact on business unit.

Based on these factors, **Alternative 1** is recommended as the most preferred alternative from a social perspective.

When considering the social impacts of the ash disposal facility, the importance of Camden Power Station on a national scale must be considered. Electricity supply is a critical issue in South Africa at the moment and the proposed project will add to the stability of the service. From a greater societal perspective the project will thus have a positive impact, as Camden Power Station is of strategic importance in South Africa. The power station employs a significant number of people. Neighbours of the power station report good relationships. The new ash disposal facility will extend the life of the power station, and in the current economic conditions the No-Go option will have dire social consequences. The need for the proposed project is undeniable. It is therefore recommended that the project proceed with Alternative 1 as the preferred alternative. The mitigation measures should be adhered to to ensure the proper management and mitigation of impacts.

Declaration of Independence

Ptersa Environmental Management Consultants declare that:

- All work undertaken relating to the proposed project were done as an independent consultant;
- They have the necessary required expertise to conduct social impact assessments, including the required knowledge and understanding of any guidelines or policies that are relevant to the proposed activity;
- They have undertaken all the work and associated studies in an objective manner, even if the findings of these studies were not favourable to the project proponent;
- They have no vested financial interest in the proposed project or the outcome thereof, apart from remuneration for the work undertaken under the auspices of the abovementioned regulations;
- They have no vested interest, including any conflicts of interest, in either the proposed project or the studies conducted in respect of the proposed project, other than complying with the required regulations;
- They have disclosed any material factors that may have the potential to influence the competent authority's decision and/or objectivity in terms of any reports, plans or documents related to the proposed project as required by the regulations.

Record of Experience

This report was compiled by Ilse Aucamp and San-Marié Aucamp.

Ilse Aucamp has more than 10 years of experience in Social Impact Assessment. She holds a Masters degree in Environmental Management as well as a degree in Social Work and is frequently a guest lecturer in pre- as well as post-graduate programmes at various tertiary institutions. Her expertise includes social impact assessments, social management plans, social and labour plans, social auditing, training as well as public participation. She is the past international chairperson of the Social Impact Assessment section of the International Association of Impact Assessment (IAIA) as well as a past member of the National Executive Council of IAIA South Africa.

San-Marié Aucamp is a registered Research Psychologist with extensive experience in both the practical and theoretical aspects of social research. She has more than 10 years experience in social research and she occasionally presents guest lectures in social impact assessment. Her experience includes social impact assessments, social and labour plans, training, group facilitation as well as social research. She is a past council member of the Southern African Marketing Research Association (SAMRA).

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GLOSSARY OF TERMS

Sense of place: Defining oneself in terms of a given piece of land. It is the manner in which humans relate or feel about the environments in which they live.

Social impact: Something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense.

Social change process: A discreet, observable and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts.

Social Impact Assessment: The processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment.

Social license to operate: The acceptance and belief by society, and specifically local communities, in the value creation of activities.

LIST OF ABBREVIATIONS

CS	Community Survey
DM	District Municipality
EIA	Environmental Impact Assessment
EMP	Environmental Management Plan
ESOMAR	European Society for Opinion and Marketing Research
GDP	Gross Domestic Product
GGP	Gross Geographical Product
HDSA	Historically Disadvantaged South African
IDP	Integrated Development Plan
LM	Local Municipality
NEMA	National Environmental Management Act
SAMRA	Southern African Marketing Research Association
SIA	Social Impact Assessment
UNEP	United Nations Environmental Programme

1 Introduction

The purpose of this report is to provide baseline information regarding the social environment and to identify possible social impacts that may come about as a result of the proposed expansion of the ash disposal facilities at Camden Power Station as well as to propose ways in which to manage impacts. This will assist decision-makers on the project in making sound decisions by providing information on the potential or actual consequences of their actions. The process entailed the following:

1. A baseline socio-economic description of the affected environment;
2. Identification of potential social change processes that may occur as a result of the project;
3. Identification of potential social impacts;
4. Identification of mitigation measures.
5. Recommendation for monitoring

One of the ways in which social risk can be managed is by conducting a social impact assessment (SIA). Such an assessment can assist with identifying possible social impacts and risks. This is important, because disregarding social impacts can alter the cost-benefit equation of development and in some cases even undermine the overall viability of a project. A proper social impact assessment can have many benefits for a proposed development (UNEP, 2002) such as:

- Reduced impacts on communities of individuals,
- Enhanced benefits to those affected,
- Avoiding delays and obstruction – helps to gain development approval (social license),
- Lowered costs,
- Better community and stakeholder relations,
- Improved proposals.

Social impacts are context specific. Not only should social impacts be interpreted within the context of the proposed project, but also within the context of other topics that may sometimes appear to have little relevance, but within

this context can be strong drivers of some of the social impacts.

Zitholele Consulting was appointed to manage the environmental impact assessment process for the proposed project and they appointed Ptersa Environmental Management Consultants to perform a social impact assessment. This report represents the social impact assessment for the proposed project.

2 Background

Eskom, the South African utility that generates, transmits and distributes electricity, is currently operating the Camden Power Station as part of its electricity generation fleet. Throughout the operational life of the power station, ash is being generated at the station. The ash is being disposed of at an authorised ash disposal site within the Camden Power Station premises. The current ash disposal site is reaching the end of its capacity, and it is anticipated that a new ash disposal facility will be required by approximately mid 2014.

In order to establish a new ash disposal facility within close proximity to the power station, a site selection exercise was undertaken in line with the Minimum Requirements for the Disposal of Waste by Landfill, Draft 3rd edition 2005 to identify the most feasible site alternatives (Zitholele Consulting, September 2011). The following components of the ash disposal site are being taken into consideration:

- the lifespan of the facility;
- footprint of the facility (groundspace);
- height of the facility (airspace);
- type of waste (ash and brine) to be disposed as well as the volumes (waste stream analysis); and
- geotechnical, hydrogeological conditions and foundation design.

The following associated infrastructure is envisioned for the ash disposal facility:

- Ash return water dams and trenches/drains;
- Pipelines;
- Access roads and fencing;
- Access control;
- Storm water drainage and monitoring boreholes;
- Relocation of existing service infrastructure;
- Rehabilitation of redundant infrastructure.

Alternatives being assessed for the construction of the Camden ash disposal site can be divided into the following categories:

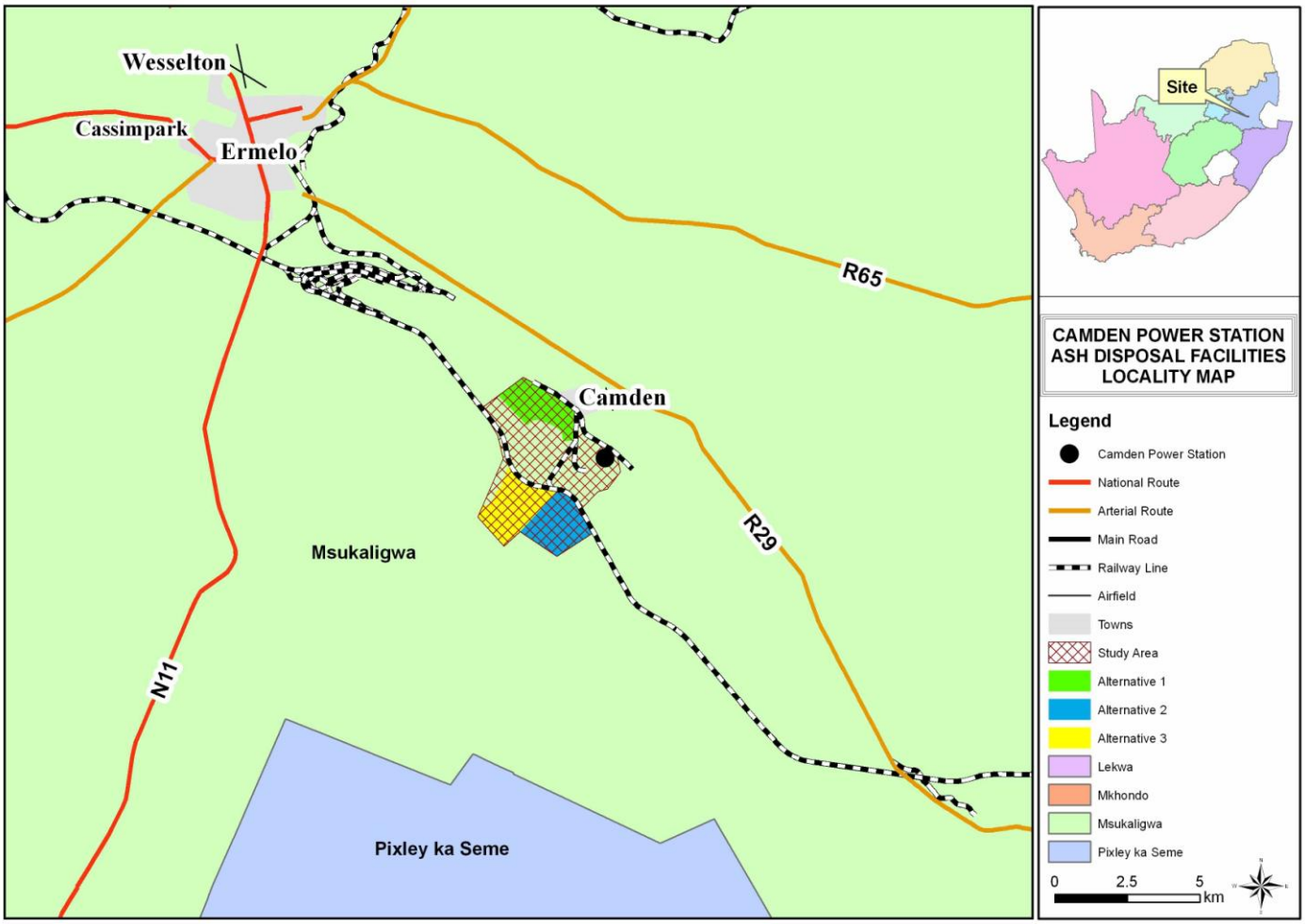
- Waste disposal alternatives;
- Site alternatives;
- Operation alternatives, and
- The No-Go (no development) alternative.

Although ash in its various forms can be utilised in the building industry as a cement extender or aggregate, the ash generated are classified as hazardous according to the Minimum Requirements which prevents the use/recycling of

the ash prior to the delisting of the ash for a specific use. In addition the volume of ash produced by power stations far exceed the potential market for recycled ash products. At present there is no feasible recycling or reuse alternative for the ash being produced at the Camden Power Station. In the case of the ash, waste disposal is the most feasible alternative for the Camden Power Station.

A site selection exercise was undertaken in line with the applicable requirements and four site alternatives were identified during a screening workshop. One of the alternatives is suspected of containing a fatal flaw, so for the purposes of the SIA the remaining three alternatives are evaluated. Figure 1 shows the location of the proposed site alternatives in relation to the Camden Power Station.

Figure 1: Location of site alternatives for proposed Camden ash disposal facility



3 Study approach

3.1 Information base

The information used in this study was based on the following:

1. A literature review (see list provided in the References);
2. Professional judgement based on experience gained with similar projects;
3. Focus group and individual meetings with affected parties.

3.2 Assumptions and limitations

The following assumptions and limitations were relevant:

1. Not every individual in the community could be interviewed, therefore only key people in the community were approached for discussion. Additional information was obtained using existing data, records of public meetings and personal interviews.
2. The social environment constantly changes and adapts to change, and external factors outside the scope of the project can offset social changes, for example changes in local political leadership. It is therefore difficult to predict all impacts to a high level of accuracy, although care has been taken to identify and address the most likely impacts in the most appropriate way for the current local context.
3. Social impacts can be felt on an actual or perceptual level, and therefore it is not always straightforward to measure the impacts in a quantitative manner.
4. Social impacts commence when the project enters the public domain. Some of these impacts are thus already taking place, irrespective whether the project (or a specific alternative) continues or not.
5. There are different groups with different interests in the community, and what one group may experience as a positive social impact, might be experienced as a negative impact by another group. This duality will be pointed out in the impact assessment phase of the project.
6. Social research is time-consuming and limited time was available to conduct the study.

3.3 Methodology

Scientific social research methods were used for this assessment. In order to clarify the process to the reader, this section will start with a brief explanation of the processes that have been used in this study.

3.3.1 Defining of concepts

The theoretical model used for this impact assessment was developed by Slootweg, Vanclay and Van Schooten and presented in the International Handbook of Social Impact Assessment (Vanclay & Becker, 2003). This model identifies pathways by which social impacts may result from proposed projects. The model differentiates between social change processes and social impacts, where the social change process is the pathway leading to the social impact. Detail of how the model works is not relevant to this study, but it is important to understand the key concepts, which will be explained in the following paragraphs.

Social change processes are set in motion by project activities or policies. A social change process is a discreet, observable and describable process that changes the characteristics of a society, taking place regardless of the societal context (that is, independent of specific groups, religions etc.) These processes may, in certain circumstances and depending on the context, lead to the experience of social impacts (Vanclay, 2003). If managed properly, however, these changes may not create impacts. Whether impacts are caused will depend on the characteristics and history of the host community, and the extent of mitigation measures that are put in place (Vanclay, 2003). Social change processes can be measured objectively, independent of the local context. Examples of social change processes are an increase in the population, relocation, or the presence of temporary workers. Social change processes relevant to the project will be discussed before the possible social impacts will be investigated.

For the purpose of this report, the following social change process categories were investigated:

- demographic processes;
- economic processes;
- geographic processes;
- institutional and legal processes;
- emancipatory and empowerment processes;
- sociocultural processes; and
- other relevant processes.

The International Association for Impact Assessment (2003) states that Social Impact Assessment includes the processes of analysing, monitoring and managing the intended and unintended social consequences, both positive and negative, of planned interventions (policies, programs, plans, projects) and any social change processes invoked by these interventions. Its primary purpose is to bring about a more sustainable and equitable biophysical and human environment. The Inter-organizational Committee on Principles and Guidelines for Social Impact Assessment (2003) defines Social Impact Assessment in terms of "efforts to assess, appraise or estimate, in advance, the social consequences that are likely to follow from proposed actions".

A **social impact** is something that is experienced or felt by humans. It can be positive or negative. Social impacts can be experienced in a physical or perceptual sense. Therefore, two types of social impacts can be distinguished:

- **Objective** social impacts – i.e. impacts that can be quantified and verified by independent observers in the local context, such as changes in employment patterns, in standard of living or in health and safety.
- **Subjective** social impacts – i.e. impacts that occur "in the heads" or emotions of people, such as negative public attitudes, psychological stress or reduced quality of life.

It is important to include subjective social impacts, as these can have far-reaching consequences in the form of opposition to, and social mobilisation against the project (Du Preez & Perold, 2005).

For the purpose of this SIA, the following Social Impact Assessment categories were investigated:

- health and social well-being;
- quality of the living environment;
- economic impacts and material well-being;
- cultural impacts;
- family and community impacts;
- institutional, legal, political and equity impacts; and
- gender impacts.

Relevant criteria for selecting significant social impacts included the following:

- probability of the event occurring;

- number of people that will be affected;
- duration of the impact;
- value of the benefits or costs to the impacted group;
- extent to which identified social impacts are reversible or can be mitigated;
- likelihood that an identified impact will lead to secondary or cumulative impacts;
- relevance for present and future policy decisions;
- uncertainty over possible effects; and
- presence or absence of controversy over the issue.

For the purpose of this study, the model was adapted to suit the South African context, and where processes and impacts were not relevant to the study, it was omitted. Each category has a number of sub-categories, which have also been investigated. In order to make the report easier to read, similar impacts were grouped together, even if they did fall under different categories. Therefore, a number of impacts from different categories will be discussed under one heading. It is important to mention, however, that all categories were investigated and analysed prior to the writing of this report to ensure that the study is as thorough as possible.

3.3.1 Literature study

A detailed literature search was undertaken to obtain secondary data for the baseline description of the socio-economic environment. The information in this report was acquired via statistical data obtained from Statistics South Africa, SIA literature (see References) as well as information from reputable sources on the World Wide Web.

3.3.2 Research approach

Traditionally there are two approaches to SIA, a technical approach and a participatory approach. A technical approach entails that a scientist remains a neutral observer of social phenomena. The role of the scientist is to identify indicators, obtain objective measures relevant to the situation and provide an expert assessment on how the system will change (Becker, Harris, Nielsen & McLaughlin, 2004). A participatory approach uses the knowledge and experiences of individuals most affected by the proposed changes as the basis for projecting impacts. In this case the role of the scientist is facilitator of knowledge sharing, interpretation and reporting of impacts (Becker et al, 2004). For the

purpose of this study, a participatory approach was followed. The impact assessment was therefore conducted based on qualitative information and a participatory approach.

The findings presented in this report are based on primary as well as secondary (desk) research. A qualitative approach was followed for the primary research, while qualitative as well as quantitative data were used for the secondary research.

The layperson sometimes criticises qualitative research as “subjective” or “not really that scientific”. For this reason it is vital to understand the distinction between qualitative and quantitative research as well as their respective areas of application.

Qualitative research as a research strategy is usually characterised by the inference of general laws from particular instances, forms theory from various conceptual elements, and explains meaning (David & Sutton, 2004). It usually emphasise words rather than quantification in the collection and analysis of data. Data collection takes place by using methods such as unstructured or semi-structured interviews, focus groups, observations, etc. Data is not recorded in any standardised coding format, but are usually reported according to themes. Qualitative data express information about feelings, values and attitudes. This approach is used where insight and understanding of a situation is required (Malhotra, 1996). Participants are selected based on their exposure to the experience or situation under review. The aim of qualitative research is to understand, not to quantify and as such is extremely suitable for assessing social impacts. A potential impact needs to be understood before it can be assessed appropriately.

Quantitative research as a research strategy usually makes inferences of particular instances by reference to general laws and principles and tends to emphasize what is external to or independent of the mind (objective) and incorporates a natural science model of the research process (David & Sutton, 2004). This usually makes it easier for a person with a natural or physical sciences background to relate to. This approach usually emphasises quantification in the collection and analysis of data. Data collection takes place by using methods such as structured questionnaires and data is recorded in a numeric or some other standardised coding format. Data is expressed in numerical format and statistical techniques are usually used to assist with data interpretation. This approach is used when information needs to be generalised to a specific population and participants are usually selected using probability sampling techniques (although non-probability methods can be used depending on the characteristics of the target population).

3.3.3 Primary data collection

Primary data was collected through personal interviews as well as through group interviews. Respondents for the interviews were selected by means of non-probability sampling techniques, more specifically a combination of judgemental and snowball sampling. The interviews took place individually or in a group. The mode of interviewing used depended on the availability and convenience of the particular respondent or group of respondents. An unstructured interviewing technique was used. This allowed for the respondent to communicate freely all information that he / she deemed relevant to the proposed development that may be missed in a more structured interviewing format. It also allowed for the interviewer to probe and to clarify issues.

The data gathered from the interviews were analysed and interpreted using qualitative techniques such as content analysis and triangulated with other data sources for assessment purposes.

3.3.4 Ethical issues

The fact that human beings are the objects of study in the social sciences brings unique ethical problems to the fore. Every individual have a right to privacy which is the individual's right to decide when, where, to whom, and to what extent his or her attitudes, beliefs and behaviour will be revealed (Strydom, 2002). Every person interviewed for the purposes of this report has been ensured that although the information disclosed will be used, their names will not be disclosed without their permission. Therefore, to protect those consulted and to maintain confidentiality, the people interviewed for this report will not be named in the report. Records of the interviews have been kept. This is in line with international as well as national research practices such as the ESOMAR and SAMRA codes of conduct.

4 Baseline description of the social environment

According to the National Environmental Management Act (NEMA, 1998) environment refers to the surroundings in which humans exist. When viewing the environment from a social perspective the question can be asked what exactly the social environment is. Different definitions for social environment exist, but a clear and comprehensive definition that is widely accepted remains elusive. Barnett & Casper (2001) offers the following definition of human social environment:

> *"Human social environments encompass the immediate physical surroundings, social relationships, and cultural milieus within which defined groups of people function and interact. Components of the social environment include built infrastructure; industrial and occupational structure; labour markets; social and economic processes; wealth; social, human, and health services; power relations; government; race relations; social inequality; cultural practices; the arts; religious institutions and practices; and beliefs about place and community. The social environment subsumes many aspects of the physical environment, given that contemporary landscapes, water resources, and other natural resources have been at least partially configured by human social processes. Embedded within contemporary social environments are historical social and power relations that have become institutionalized over time. Social environments can be experienced at multiple scales, often simultaneously, including households, kin networks, neighbourhoods, towns and cities, and regions. Social environments are dynamic and change over time as the result of both internal and external forces. There are relationships of dependency among the social environments of different local areas, because these areas are connected through larger regional, national, and international social and economic processes and power relations."*

Environment-behaviour relationships are interrelationships (Bell, Fisher, Baum & Greene, 1996). The environment influences and constrains behaviour, but behaviour also leads to changes in the environment. Only by understanding people in the context of their environment can the impacts of a project on them truly be comprehended. The baseline description of the social environment will include the identification and analysis of relevant stakeholders; a description of the area within a provincial, district and local context that will focus on the characteristics of the area as well as a description of the population of the area based on a number of demographic, social and economic variables.

4.1 Description of the area

The site alternatives for the proposed project are located at the existing Camden Power Station approximately 12 km outside the town of Ermelo in the Mpumalanga Province. The area is in the boundaries of the Msukaligwa Local Municipality in the Gert Sibande District Municipality. In the following paragraphs a brief discussion of the study area will be given on provincial level, followed by a description of key characteristics on a district and local level.

4.1.1 Mpumalanga Province

The **Mpumalanga Province** is located in the north eastern part of South Africa and covers an area of approximately 82 333 km^2 (www.mputopbusiness.co.za). It borders the Limpopo Province, Gauteng, the Free State, KwaZulu Natal and internationally Swaziland and Mozambique. The word Mpumalanga means “place where the sun rises”.

The province consists of three district municipalities, namely Gert Sibande, Nkangala and Ehlanzeni. Nelspruit is the provincial capital and other major towns include Barberton, Delmas, Ermelo, Hazyview, Komatipoort, Malelane, Mashishing (Lydenburg), Middelburg, Piet Retief, Sabie, Secunda, Standerton, Volksrust, White River as well as Emalahleni (Witbank) (www.mpumalanga.com).

Mpumalanga is South Africa’s major forestry production area and is also the world’s largest producer of electrolytic manganese metal. Six major industrial clusters have been identified in Mpumalanga (Mpumalanga PGDS) in which numerous investment opportunities exists, namely stainless steel; agri-processing; wood products; chemical industry and chemical products; agri-products and tourism.

Extensive mining is done in the province. Minerals found include: gold, platinum group metals, silica, chromite, vanadiferous magnetite, argentiferous zinc, antimony, cobalt, copper, iron, manganese, tin, coal, andalusite, chrysotile asbestos, kieselguhr, limestone, magnesite, talc and shale.

Mpumalanga also accounts for 83% of South Africa's coal production. Ninety percent of South Africa's coal consumption is used for electricity generation and the synthetic fuel industry. Coal-fired power stations are situated close to the coal deposits.

The province mainly exports primary products from its mining and agricultural activities with little value addition. Mpumalanga will be able to increase its share of export contribution towards the provincial GDP by adding value to its export products through beneficiation (Mpumalanga Economic

Profile).

4.1.2 Gert Sibande District Municipality

The Gert Sibande DM borders the KwaZulu Natal, Free State and Gauteng provinces as well as the Delmas, Emalahleni, Steve Tshwete, Emakhazeni, Mbombela and Umjindi local municipalities. There are seven local municipalities in the Gert Sibande district, namely the Dipaleseng, Govan Mbeki, Albert Luthuli, Lekwa, Mkhondo, Msukaligwa and Pixley Ka Seme Local Municipalities. Some municipalities have areas that are under the management of traditional authorities. The settlements are mainly rural in nature with some towns. More than half of the population stay in urban areas.

The economy of the Gert Sibande district is mainly made up of mining, forestry and agriculture. One of the largest petro-chemical companies in South Africa (SASOL) is hosted in the district. The district is also host to four of Eskom's coal-fired power stations.

4.1.3 Msukaligwa Local Municipality

The Msukaligwa LM borders the Steve Tshwete, Govan Mbeki, Albert Luthuli, Mkhondo and Lekwa local municipalities. There are no areas in the municipal area that are under the management of traditional authorities. Main towns in the area are Breyten, Kwazanele, Ermelo, Wesselton, Chrissiesmeer, Kwachibikulu, Davel, Kwadela, Sheepmoor, Camden, Lothair, Silindile and Warburton. The municipality is predominantly rural with key anchor towns that dominate the urban settlements. There are also a number of farms in the area.

The main economic activities in the Msukaligwa area are coal mining, agriculture, forestry and timber processing. The area hosts Eskom's Camden power station that is being fed by surrounding coal mines in the district. Tourism also contributes to economic growth of the municipality and is boosted by areas like the Lake Chrissie wetlands, the Big Foot at Athurseat, the bushman paintings in the Breyten area and hospitality areas like the Indawo game lodge.

4.2 Description of the population

The baseline description of the population will take place on three levels, namely provincial, district and local. Only by understanding the differences and similarities between the different levels can impacts truly be comprehended. The baseline description will focus on the study area.

The data used for the socio-economic description was sourced from the Community Survey (CS) conducted by Statistics South Africa in 2007. The Community Survey is a large-scale household survey conducted by Statistics South Africa to bridge the gap between censuses. It served as a mini census and its purpose (www.statssa.gov.za) is to collect information on the trends and level of

demographic and socio-economic data; the extent of poor households; access to facilities and services; levels of employment/unemployment; in order to assist government and private sector in planning, evaluation and monitoring of programmes and policies.

Community Survey 2007 yields more up-to-date information than Census 2001 that used to be the most recent source of demographic and socio-economic data on national, district and municipal level. The results of Census 2011 will only be available in 2013.

It should however be noted that Community Survey 2007 is not a replacement of the Census (Statistics South Africa, 2007a) and that there are certain limitations inherent to the study that should be taken into consideration when interpreting the results (Statistics South Africa, 2007b):

- The scope of the study only included households and individuals. Institutions such as military bases, national parks, prisons, hotels, hospitals, military barracks, etc were excluded from the fieldwork. The institutional population is an approximation based on 2001 figures and not new data.

- The measurement of unemployment is higher and less reliable due to the differences in questions asked relative to the normal Labour Force Surveys.

- The income includes unreasonably high income for children probably due to misinterpretation of the question, e.g. listing parent's income for the child.

- The distribution of households by province has very little congruence with the General Household Survey or Census 2001. It is not yet clear whether these changes are real or whether they are due to variables that could be ascribed to the study.

- Since the Community Survey is based on a random sample and not a Census, any interpretation should be understood to have some random fluctuation in data, particularly concerning the small population for some cells. It should be understood that the figures are within a certain interval of confidence. This applies in particular to cross-tabulations on municipal level where small numbers are likely to give an under or overestimation of the true population (due to group not present in sample or number realised for sample very small). The aggregated total number per municipality however provides more reliable estimates (Statistics South Africa, 2007a).

- Further it should be noted that the estimates were done with the use of the de-facto

population (the group of population who were enumerated according to where they stayed on a specific night) and not the de-jure population (the group of population who were enumerated according to where they usually live). These results are presented as the de-jure population.

Based on this the results should be viewed as indicative of the population characteristics in the area and should not be interpreted as absolute.

4.2.1 Population

According to the Community Survey 2007, the population of South Africa is approximately 48.5 million and has shown an increase of about 8.2% since 2001. The household density for the country is estimated on approximately 3.87 people per household, indicating an average household size of 3-4 people (leaning towards 4) for most households that is slightly down from the 2001 average household size of 4 people per household.

The estimated increase in population size for the Mpumalanga Province was the same as for South Africa, but this growth was not seen in the Gert Sibande District Municipality, where there was a slight decrease in population in 2007 since 2001 (Table 1). In the Msukaliwa LM there was a slight increase in the population size since 2001. The Gert Sibande district has a lower population density (number of people per km^2) than the Mpumalanga Province, but higher than the Msukaligwa LM.

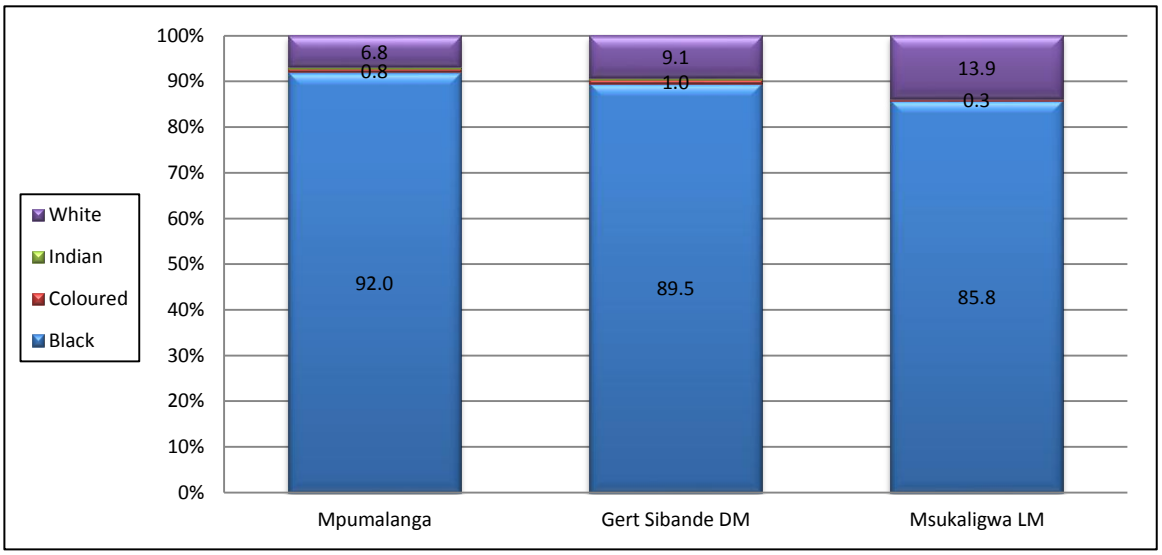
Although there was a decrease in population size in the Gert Sibande DM, there was an increase in the number of households in the area that were just lower than on provincial level, indicating that households are generally becoming smaller. The increase in the number of households in the Msukaligwa LM was much smaller than on provincial or district level.

Table 1: Community Survey 2007 Population, growth and household estimates (sources: CS2007; IDP's; www.kzntopbusiness.co.za)

	Mpumalanga	Gert Sibande DM	Msukaligwa LM
Approximate population size	3,643,435	890,699	126,268
Approximate number of households	940,403	247,518	31,750
Average population density (number of people per km^2)	45.84	27.97	24.15
Average household density (number of people per household)	3.9	3.6	4.0
Estimated growth in population size since 2001 (in %)	8.2	-1.0	1.2
Estimated growth in number of households since 2001 (in %)	19.7	17.0	6.9
Estimated change in household sizes since 2001 (in %)	-0.4	-0.7	-0.2

The greatest proportion of the population on all three levels belongs to the Black population (Figure 2). In the Msukaligwa LM there are proportionately more people form the White population group.

Figure 2: Population distribution (shown in percentage, source: CS 2007)



4.2.2 Age

The average age of the population in Mpumalanga is 25.98 years. In the Gert Sibande district in Mpumalanga, the average age of the population is slightly higher than on provincial level, with the average age of the Msukaligwa LM the highest of the areas under investigation (Table 2).

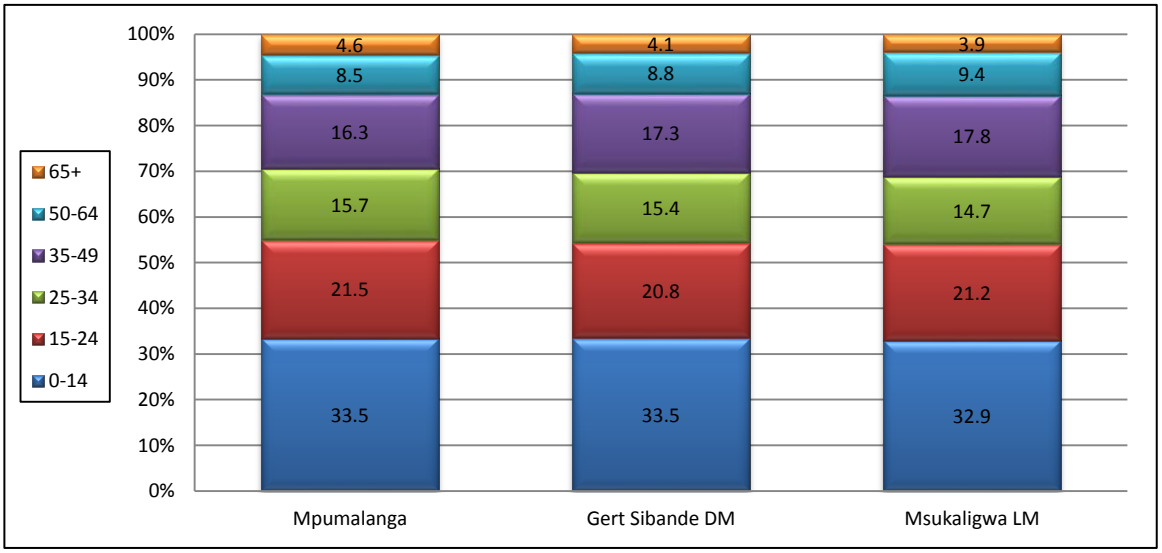
Table 2: Average age in years (source: Community Survey 2007)

	Males	Females	Total
Mpumalanga	25.01	26.89	25.98
Gert Sibande DM	25.36	26.67	26.03
Msukaligwa LM	25.09	27.34	26.27

In most of the areas the average age of the female population is higher than the average age of the male population with this difference being more marked in the Msukaligwa area.

Figure 3 shows the age distribution of the population on provincial, district and local level. The distributions look very similar to one another with approximately a third of the population being 14 years of age or younger. Such a young population indicates high potential for future growth as Census 2001 (Statistics South Africa, 2005) indicates that at the age of nineteen; about 30.5% of women have given birth to at least one child. The high proportion of children and youth further indicates that there will be a higher future demand for employment and potentially a much bigger need for infrastructure, should all these people choose to remain in these areas and not to migrate to other areas. With such a young population it is very likely that there is a high incidence of orphans and child-headed households in the area under investigation. The proportion of the population that are not economically active places a heavy burden on those who are economically active and a high frequency of poverty and hardship can be expected in these areas.

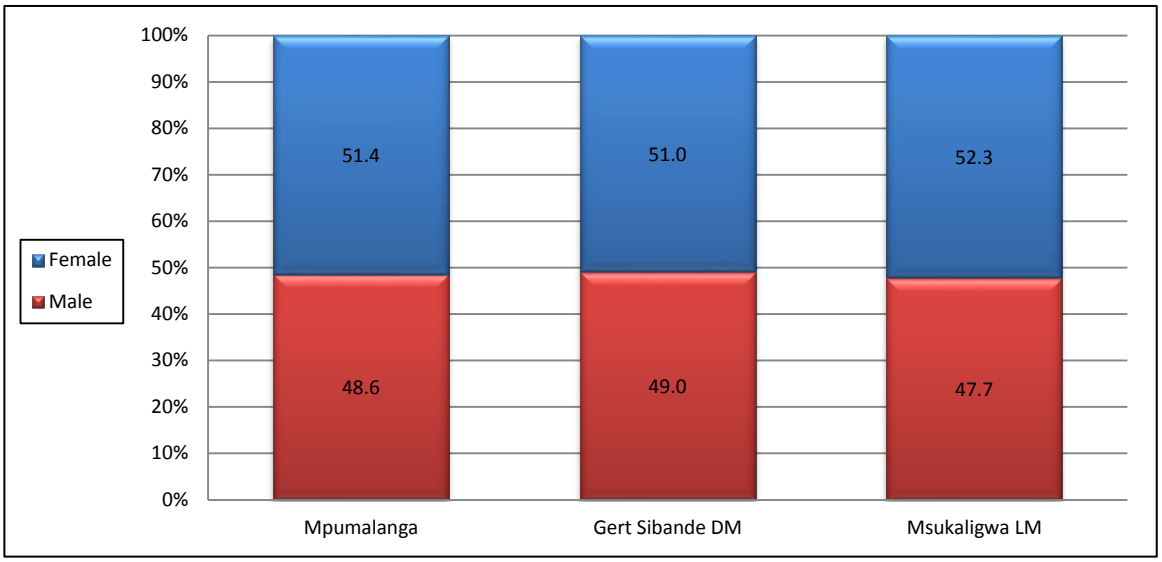
Figure 3: Age distribution (shown in percentage, source: CS 2007)



4.2.3 Gender

The gender distribution is biased towards females on all three levels (Figure 4), with the difference more noticeable in the Msukaligwa LM.

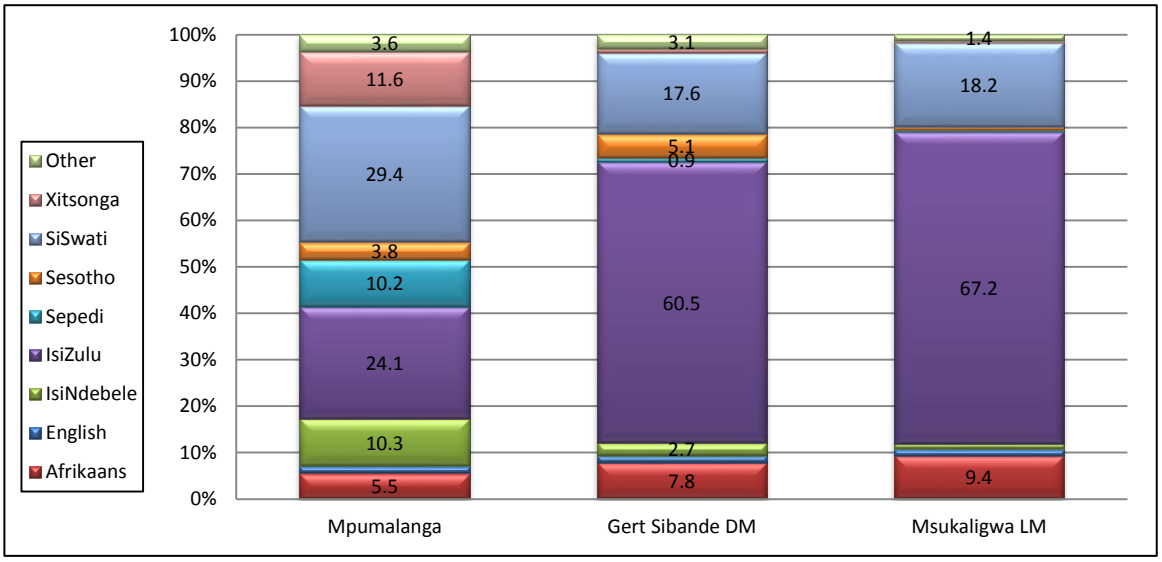
Figure 4: Gender distribution (shown in percentage, source: CS 2007)



4.2.4 Language

Community Survey 2007 did not release any data on home language. For indicative purposes the language data from Census 2001 for the areas are reviewed. Home language often gives an indication of the cultural composition of the area – an area with a greater variety of home languages are likely to be culturally more diverse than an area where mostly only one language is spoken. In Mpumalanga the dominant home languages are. The greatest diversity in terms of language is seen on provincial level with SiSwati and IsiZulu being the most common home languages in the province (**Figure 5**). On a district and local level IsiZulu is the most common home language with almost two thirds of the population indicating isiZulu as their home language. It is followed by SiSwati and Afrikaans.

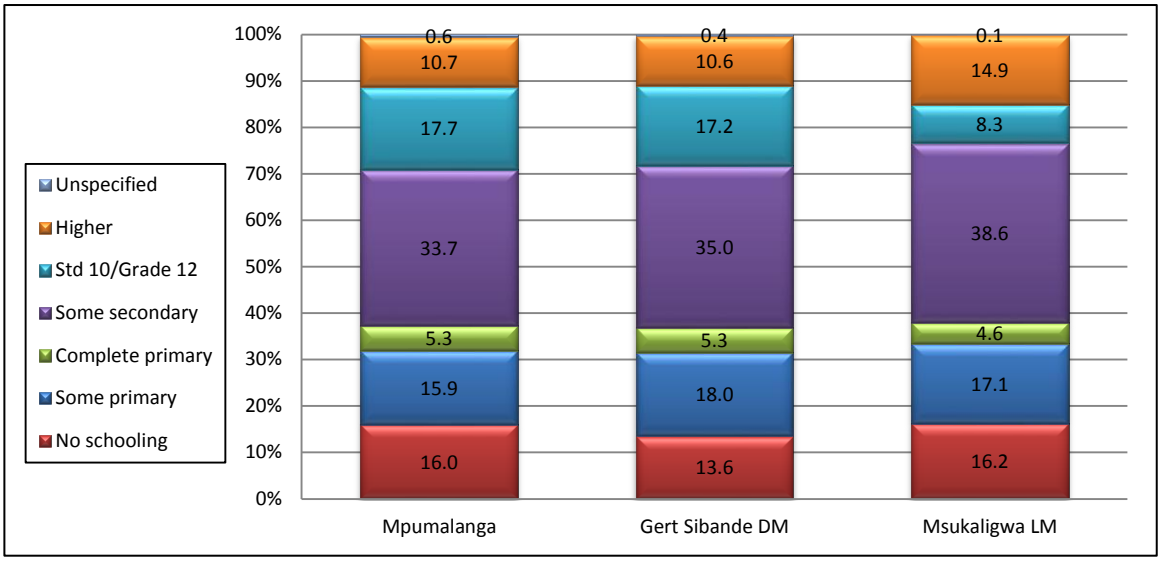
Figure 5: Language distribution (shown in percentage, source: Census 2001)



4.2.5 Education

Education Deprivation is one of the domains of multiple deprivation that was used to calculate the Provincial Indices of Multiple Deprivation (Noble et al, 2006). There is a close link between educational attainment, the type of work an individual is engaged in and the associated earnings potential. The level of education achieved by an individual determines current income and savings potential, as well as future opportunities for individuals and their dependants. The indicator that was used for Education Deprivation was the number of people aged 18-65 years with no schooling on secondary level or above. The incidence of people in Msukaligwa LM that have completed Grade 12 or higher is lower than on district or provincial level although a higher proportion of this group (on local level) have an edution level higher than Grade 12 (Figure 6).

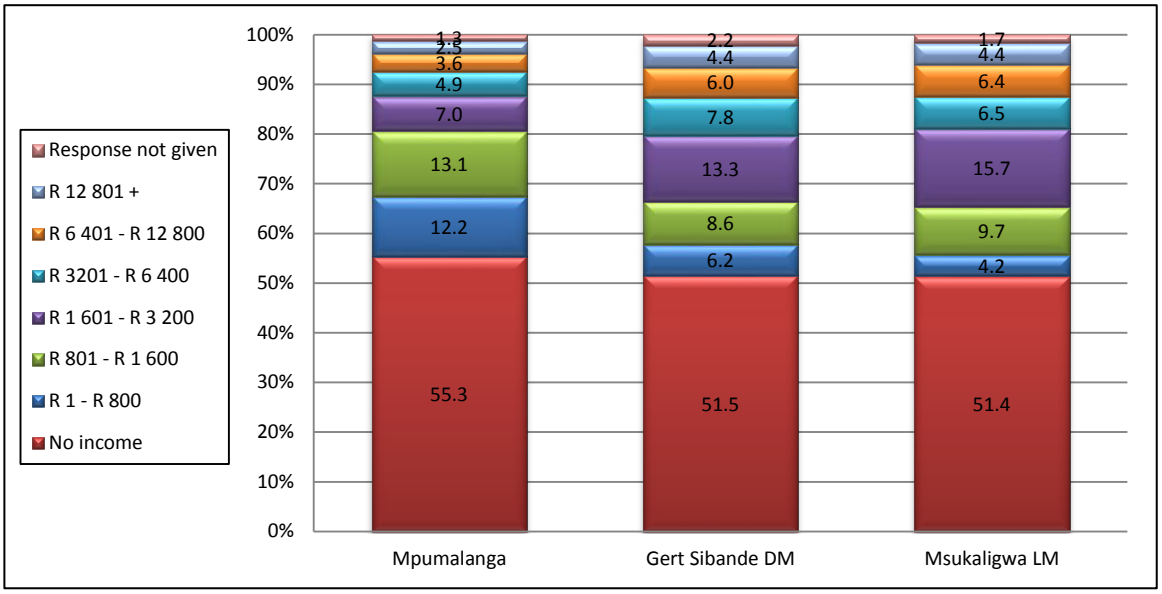
Figure 6: Highest education level – people 20 years or older (shown in percentage, source: CS 2007)



4.2.6 Income and Employment

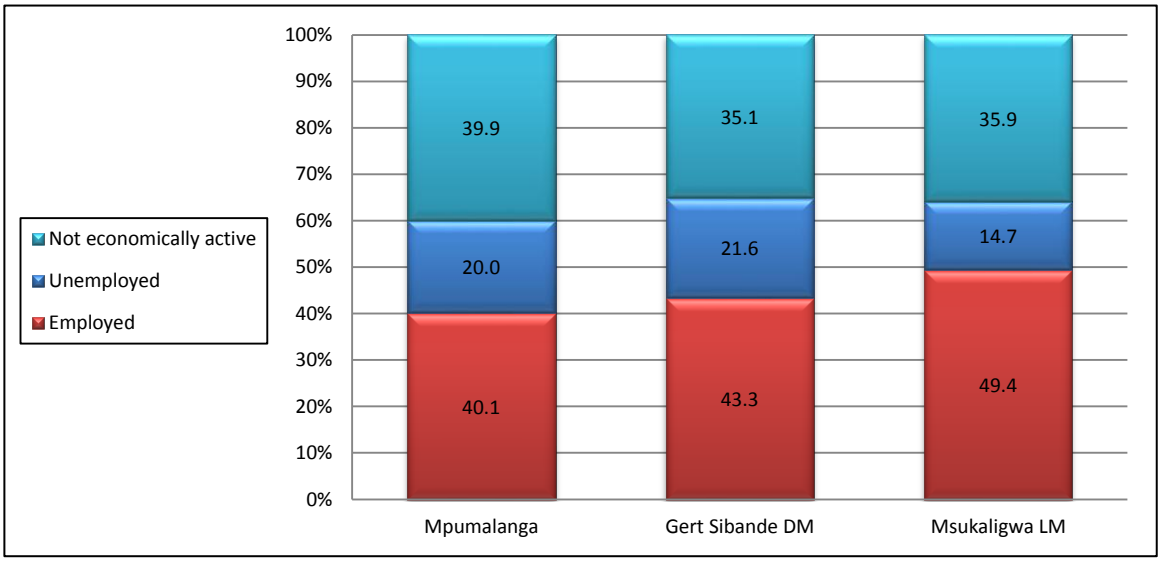
More than 50% of adults of economically active age in the areas under investigation receive no monthly income (**Figure 7**). The absence of personal income can be linked to the historical educational deprivation as well as the lack of income opportunities in the areas where these people live. The personal monthly income of those who have an income tend to be low. Personal income does not only mean money earned through employment, but also money received through grants, gifts from relatives in other areas and informal trading, although it is doubtful that all money received through grants and gifts, or earned through informal trading are reflected in the personal income figures.

Figure 7: Individual Monthly Income distribution (shown in percentage, source: CS 2007)



The highest levels of employment are found on a local level, with almost half the people of economically active age indicating that they are employed (Figure 8). Just over a third of the people in economically active age in Msukaligwa LM have indicated that they are not economically active. People who are not economically active are people from economically active age who do not form part of the labour force such as housewives/homemakers, students and scholars, pensioners and retired people, and any others who do not seek to work during the period of reference (at the time of data collection). This group also include discouraged work seekers, who have either given up on finding a job, or who live too far or who do not have the means to travel around seeking a job.

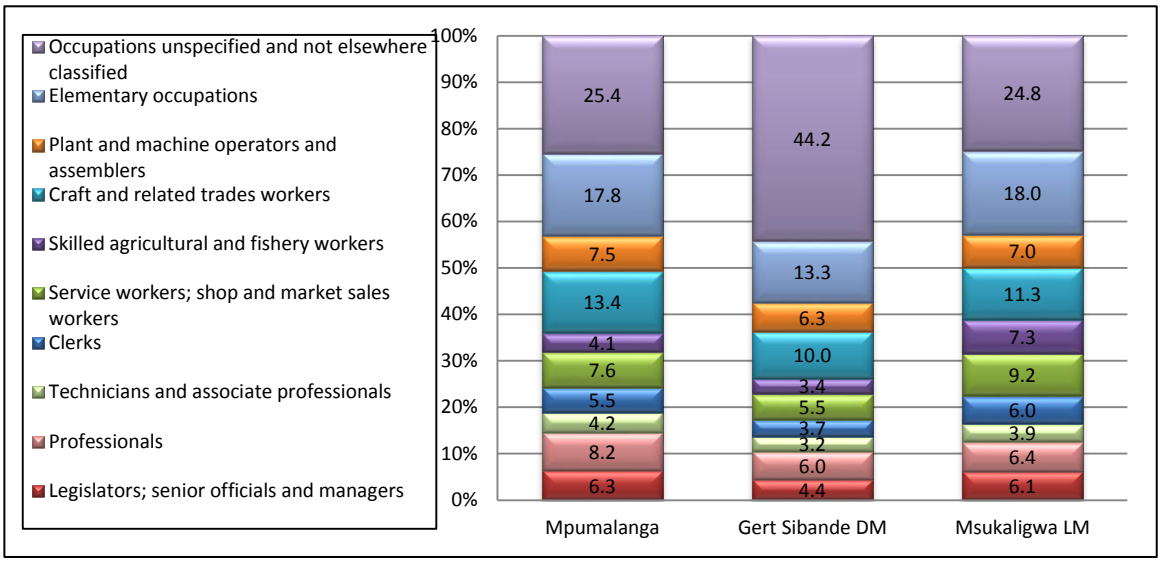
Figure 8: Employment status distribution (shown in percentage, source: CS 2007)



In terms of occupation a high proportion of occupations have been indicated as unspecified and not elsewhere classified (Figure 9). It is very likely that the occupation distribution may change should these be classified. On all three levels the largest proportion of people are working in elementary

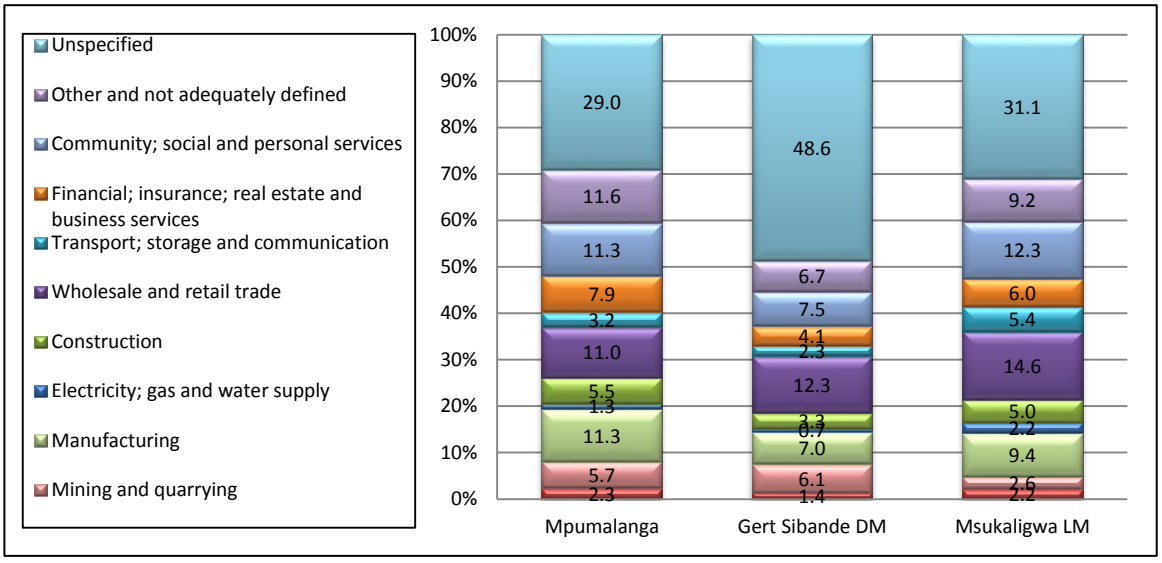
occupations such as domestic workers, street vendors, shoe cleaners, building caretakers, messengers, porters, garbage collectors, agricultural workers, mining and construction labourers, manufacturing labourers, transport labourers and freight handlers. The second largest employment category in the Msukaligwa LM is Craft and related trades workers. The category of Craft and related trades workers include extraction and building trades workers, metal, machinery and related trades workers, handicraft, printing and related trades workers and other craft and related trades workers such as food processing.

Figure 9: Occupation distribution of the employed (shown in percentage, source: CS 2007)



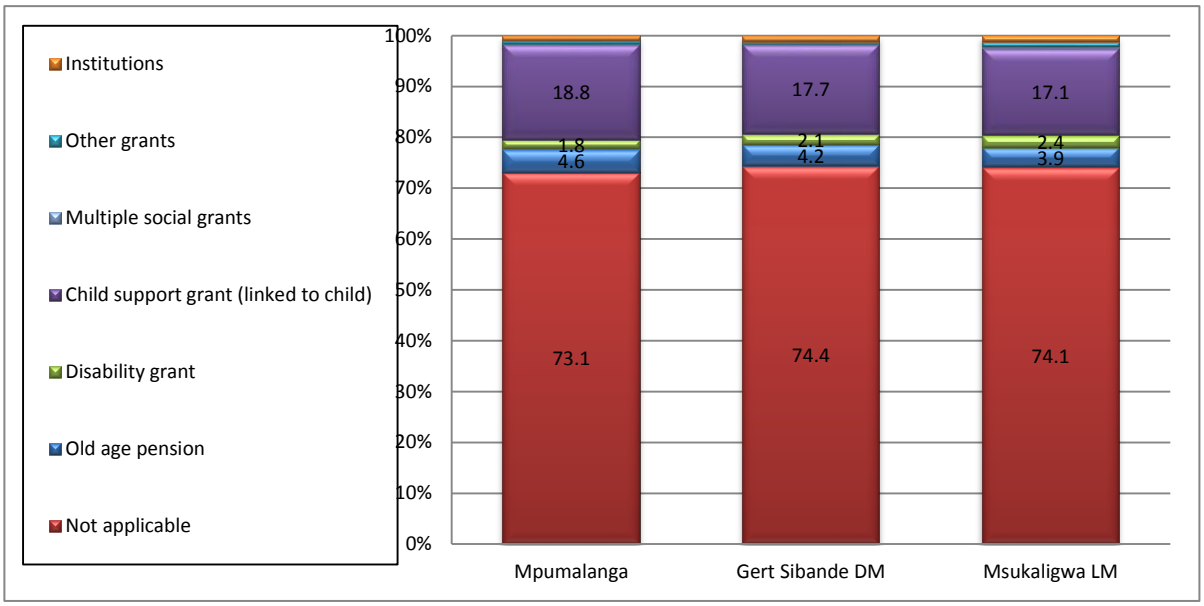
The industry profiles for the different areas under investigation look different from one another (Figure 9). It must be noted that a large proportion is indicated as either unspecified or as other and not adequately defined. Sorting this issue out could lead to a change in the profiles. The main industry of employment in Mpumalanga is Manufacturing; Community, social and personal services and Wholesale and retail trade. The Community; social and personal services sector includes public administration and defence activities, education and health and social work. In the Gert Sibande District as well as the Msukaligwa area, Wholesale and retail trade is the largest employment industry.

Figure 10: Industry distribution of the employed (shown in percentage, source: CS 2007)



Formal employment opportunities can be scarce in rural areas and are usually not the only source of money. Migrant workers send money to their families, some people are involved in informal trading and others receive social grants. Social grants include child support grants, disability grants and old age pensions. Quite often a social grant is a family's only source of income. Figure 11 shows that just less than a fifth of the population on provincial, district as well as municipal level receives child support grants.

Figure 11: Distribution of social grants (households, shown in percentage, source: CS 2007)

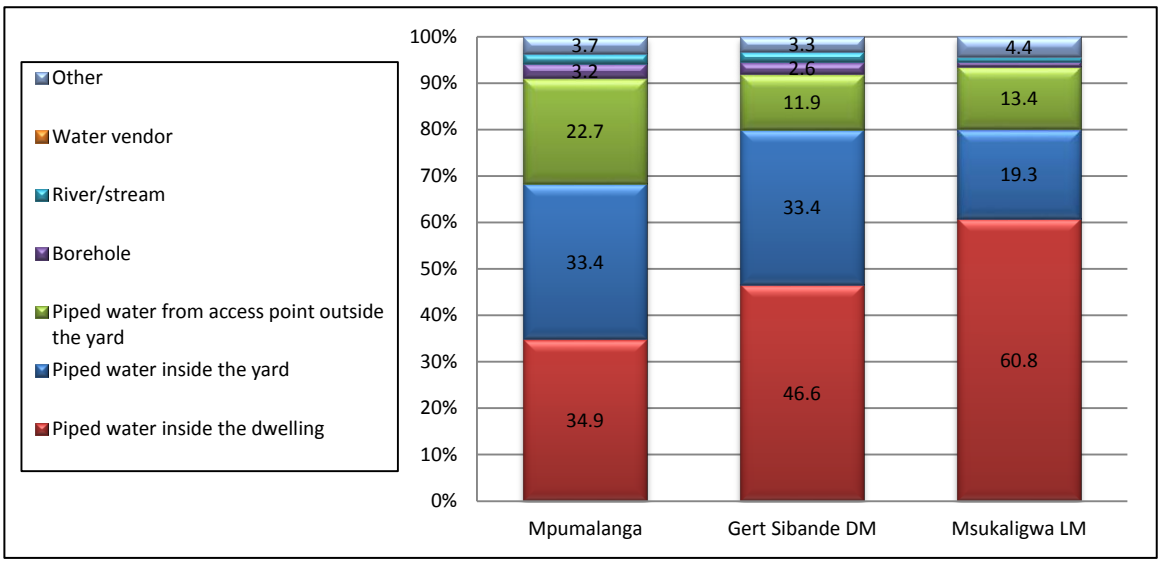


4.2.7 Infrastructure and services

Access to piped water, electricity and sanitation services relate to the domain of Living Environment Deprivation as identified by Noble et al (2006). In the Msukaligwa LM, more than 60% of household

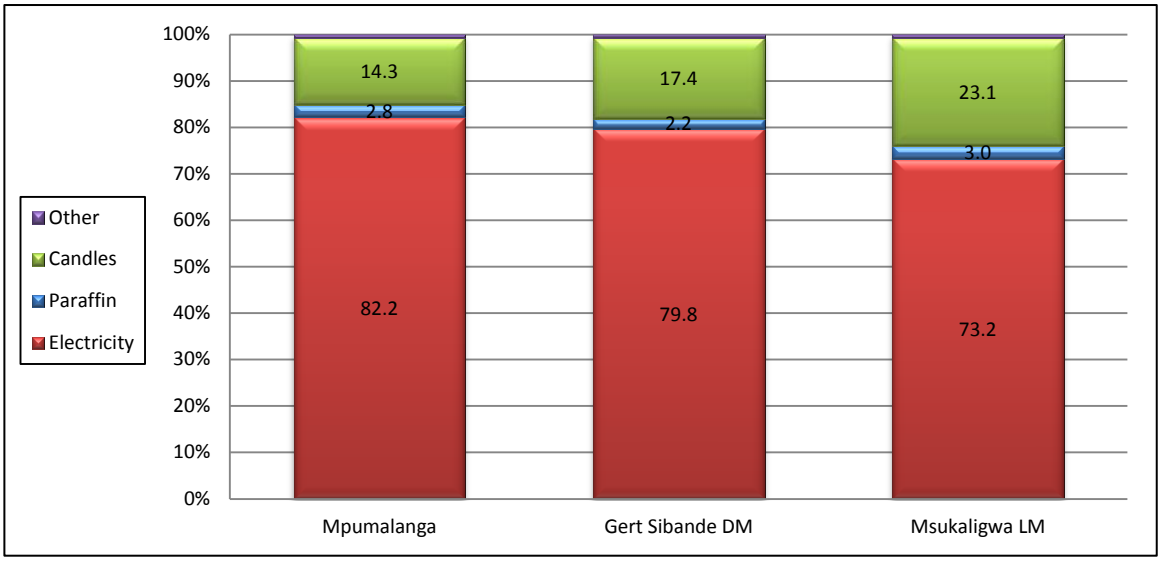
have access to piped water inside their dwellings (Figure 12). This is much higher than on district or provincial level.

Figure 12: Distribution of water supply (households, shown in percentage, source: CS 2007)



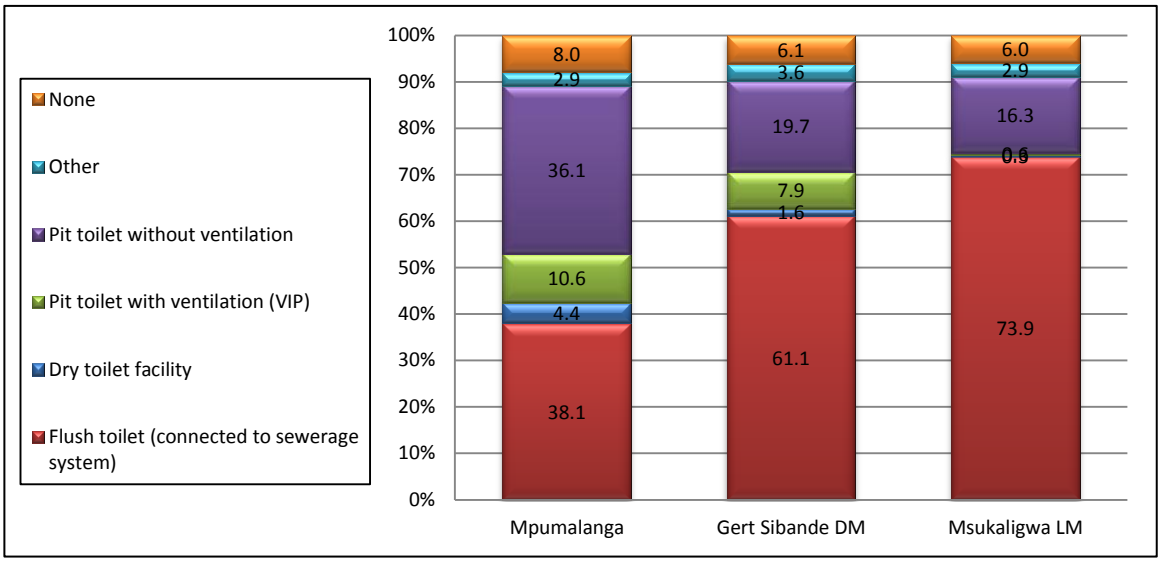
Electricity is seen as the preferred energy source for lighting (Noble et al, 2006) and the lack thereof should thus be considered a deprivation. Even though electricity as energy source may be available, the choice of energy for cooking depends to a large extent on cultural preferences, although cost, availability and effectiveness are also factors that play a role. Msukaligwa LM has the lowest incidence of households with access to electricity for lighting purposes (Figure 13). Almost a quarter of residents in the Msukaligwa LM use candles as source of energy for lighting, this is much higher than on provincial or district level.

Figure 13: Distribution of energy source for lighting (households, shown in percentage, source: CS 2007)



According to Noble et al (2006) anyone living in a household with either a chemical toilet, pit toilets without ventilation, bucket latrine, or no toilet facility can be defined as deprived. On a local level, almost three quarters of households have access to flush toilets or pit toilets with ventilation (Figure 14). As such the Msukaligwa area can be described as much less deprived in terms of the Living environment domain of Noble et al (2006) of which sanitation is a component.

Figure 14: Sanitation distribution (households, shown in percentage, source: CS 2007)

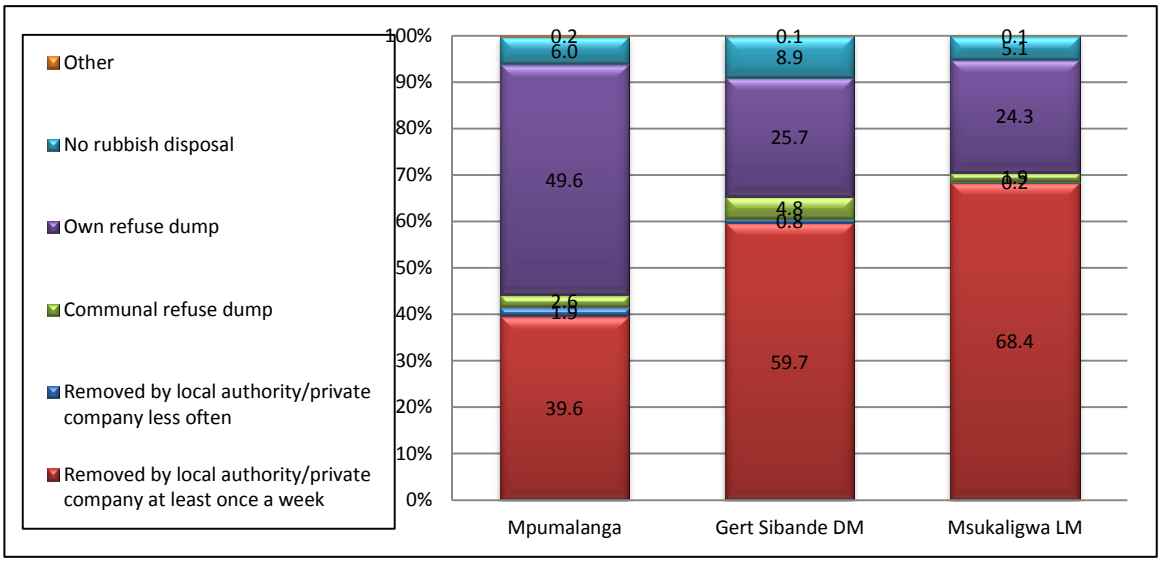


Just over two thirds of households in the Msukaligwa LM have their refuse removed at least once a week by the municipality or a private company (Figure 15). This is much higher than on district or provincial level. Approximately a quarter of households in the Msukaligwa LM have indicated that they have their own refuse dumps. Households with their own refuse dumps rely mostly on backyard dumping, burial and burning. These practices adversely impact on human health and the

environment, specifically:

- air pollution from smoke;
- pollution of ground and surface water resources and home grown fruit and vegetables;
- people inhaling smoke from fires at risk of contracting disease (cancer, respiratory related illness); and
- fires can destroy property.

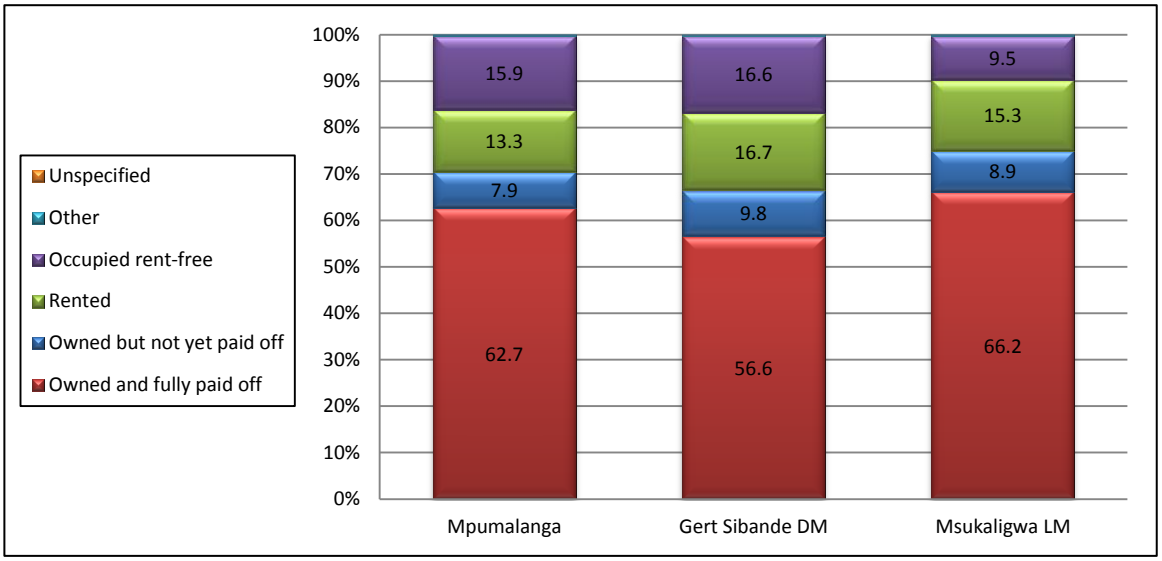
Figure 15: Refuse removal distribution (households, shown in percentage, source: CS 2007)



4.2.8 Tenure

The Msukaligwa LM has the highest proportion of households who own their dwellings and have paid them off in full (Figure 16) with about two thirds compared to just over half on district level and slightly more than 60% on provincial level.

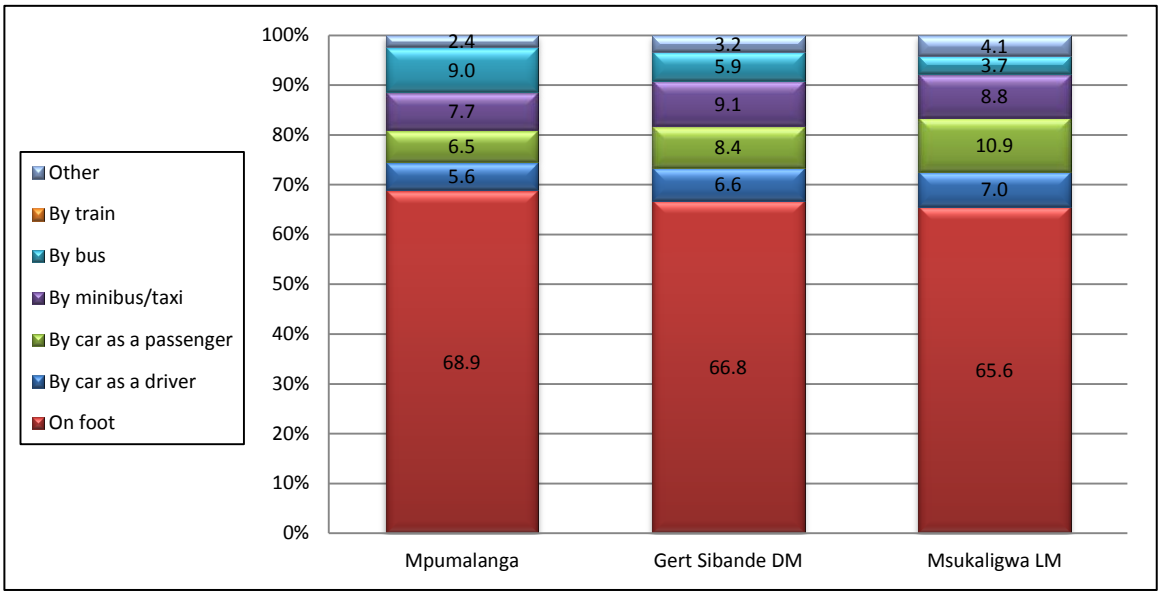
Figure 16: Tenure status distribution (shown in percentage, source: CS 2007)



4.2.9 Transport

Community Survey 2007 did not have data on the mode of travel people use to their school or place of work, and for this reason the data from Census 2001 is reviewed in order to get a feel for trends. The majority of people travel to their place of work or school by foot (Figure 17).

Figure 17: Mode of travel (shown in percentage, source: Census 2001)



4.3 Crime

The crime statistics for the SAPS are not grouped according to district municipalities, but according to SAPS regions. For this reason, the statistics will be reviewed on national and provincial level as well as for Ermelo police station, which is closest to the site.

Figure 18 gives a comparison of the distribution of crime by main category in the area with national and provincial profiles for the April 2009 to March 2010 reporting period. The highest frequency of crimes reported in South Africa, Mpumalanga and as well as the Ermelo police precinct are contact crimes (crimes against the person). These include crimes such as murder, assault, robbery and sexual crimes.

Figure 18: Crime for the April 2010 – March 2011 reporting period by main crime categories (source: www.saps.gov.za)

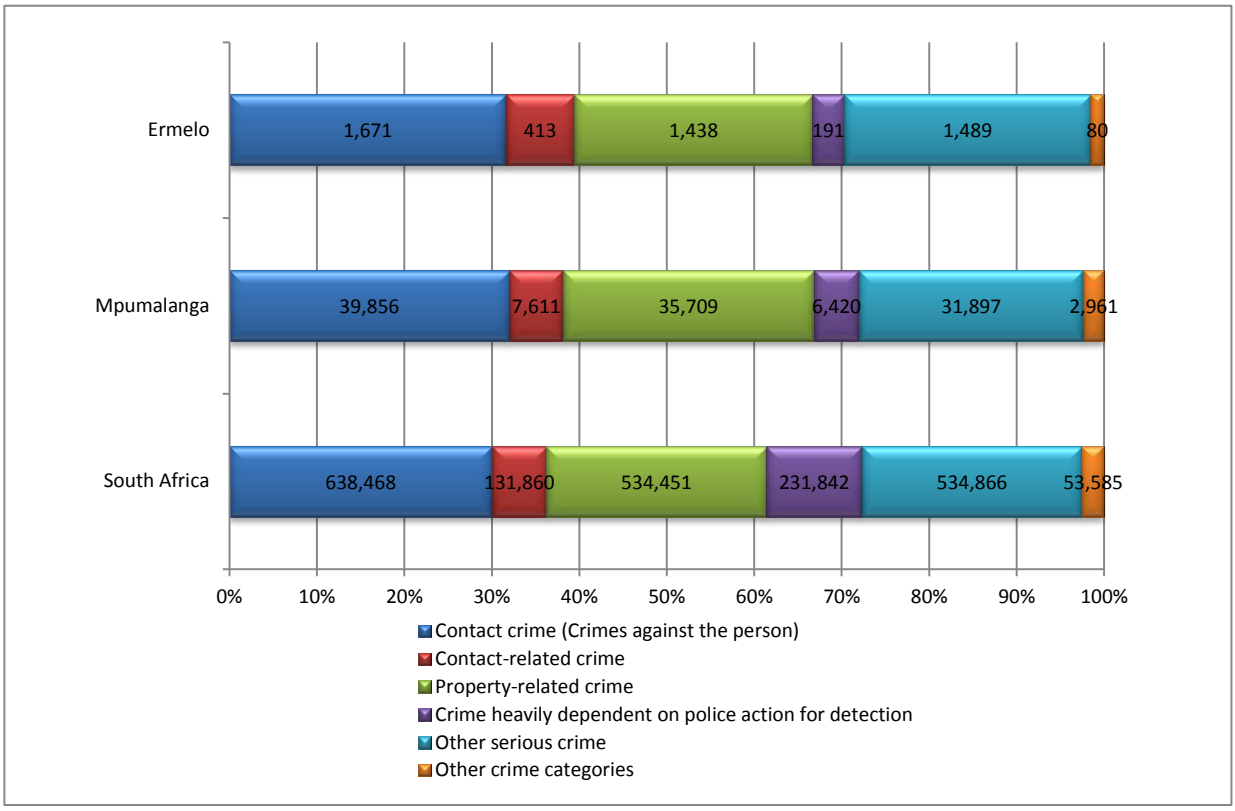
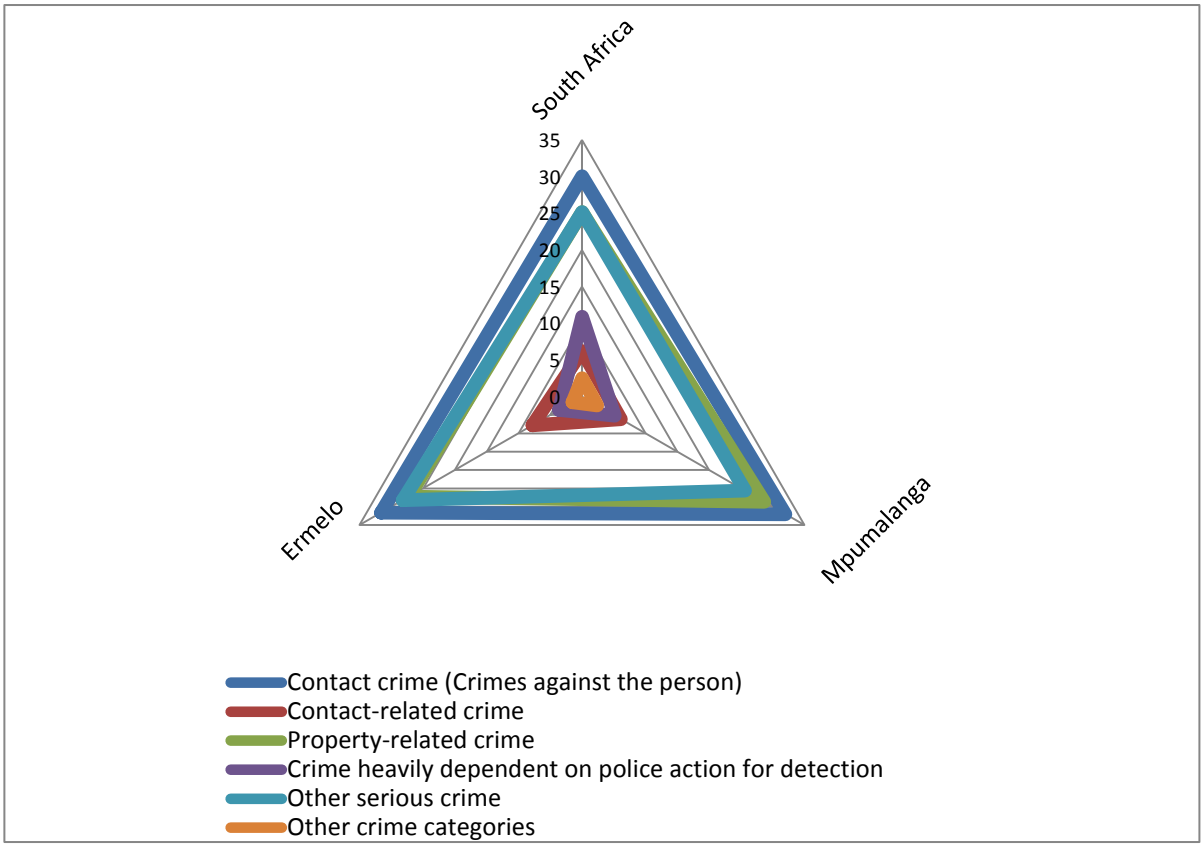


Figure 19 shows the crimes in the areas under discussion in percentage. The crime patterns for Mpumalanga and Ermelo look very similar to that of South Africa. In the Ermelo Police Precinct there are proportionately more contact crimes and proportionately less other serious crimes.

Figure 19: Crime for the April 2010 – March 2011 reporting period by main crime category (shown in percentage, source: www.saps.gov.za)



Contact crimes involve physical contact between the victims and perpetrators and as such are almost always violent in nature. For the victim, contact crime can lead to death, serious injury, psychological trauma and / or the loss of property which can especially for poorer victims have detrimental consequences. A number of contact crimes are crimes that are social or domestic in nature and usually take place between people who know each other such as friends, family and acquaintances. An analysis of dockets (SAPS, 2007) showed that in almost 90% of assault cases the people involved knew one another. In most instances the motivation for social crimes relate to a misunderstanding (SAPS, 2009), indicating that people in these communities do not have the necessary social skills to deal with these issues in another, less violent way. It also seems as if there is a close relationship between some contact crimes, particularly all categories of assault and factors and conditions like urbanisation, poverty and unemployment, vigilantism, previous offenders as well as alcohol and drugs. Urbanisation causes urban unemployment, a massive growth of informal settlements (especially in or adjacent to existing poor areas) and the disappearance of the rural subsistence economy and social support network. It also creates rising expectations and new needs (SAPS, 2007).

4.4 Stakeholder identification

Every individual potentially affected by the ash storage facility is a stakeholder in the project. The definition of stakeholder is:

> *Any individual, group, or institution who has a vested interest in the social, economic or bio-physical resources of the project area and/or who potentially will be affected by project activities and have something to gain or lose if conditions change or stay the same (Adapted from WWF, 2005).*

A stakeholder analysis identifies all primary and secondary stakeholders who have a vested interest in the issues with which the project is concerned. The goal of a stakeholder analysis is to develop a strategic view of the human and institutional landscape, and the relationships between the different stakeholders and the issues they care about most.

The stakeholder analysis will help the project identify:

- The interests of all stakeholders who may affect or be affected by the project;
- Potential conflicts or risks that could jeopardise the initiative;
- Opportunities and relationships that can be built on during implementation;
- Groups that should be encouraged to participate in different stages of the project;
- Appropriate strategies and approaches for stakeholder engagement; and
- Ways to reduce negative impacts on vulnerable and disadvantaged groups (WWF, 2005).

The full participation of stakeholders in both project design and implementation of is key to – but not a guarantee of – success. Stakeholder participation:

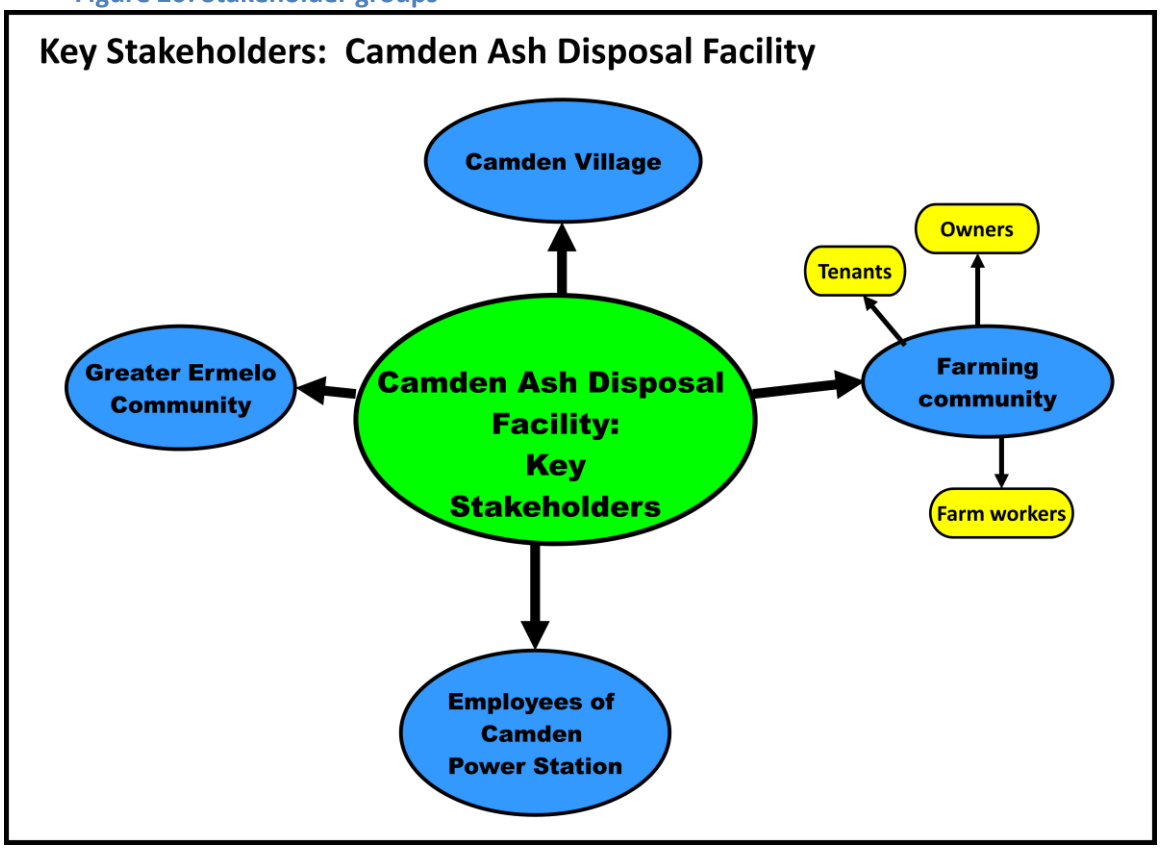
- Gives people some say over how the project may affect their lives;
- Is essential for sustainability;
- Generates a sense of ownership if initiated early in the development process;
- Provides opportunities for learning for both the project team and stakeholders themselves; and
- Builds capacity and enhances responsibility (WWF, 2005).

The timeframes and extent of the study did not allow the specialist to consult with every individual who may be affected by the proposed project. For the purpose of the stakeholder analysis, stakeholders have been clustered in groups.

4.4.1 Stakeholder groups

The figure below indicates a simple representation of the key stakeholders in the project. Stakeholders have been grouped together for the purpose of the SIA. If a certain group is not included in the stakeholder analysis it does not mean that they are not stakeholders, just that they are not key stakeholders from a social perspective.

Figure 20: Stakeholder groups



The following stakeholder groups have been identified:

- The **farming community** can be divided in three groups. The **first** group is the people who own the affected properties and make a living from the properties – either by rental income or income earned by actively working the land. The **second** group is the people who rent the affected properties and work the land to supplement their income. The **last** group is the people who work and live on the farm – the farm workers and their families.

- There are still some people residing in **Camden Village**. The village was sold to the SANDF when the plant was mothballed in 1989.

- The **greater Ermelo Community** represent the people who live in town and in smaller communities around the area.

- The **employees of Camden Power Station** represent the approximately 242 current employees at the power station.

5 Impact assessment

"Almost all projects almost always cause almost all impacts. Therefore more important than predicting impacts is having on-going monitoring and adaptive management." Frank Vanclay.

Impact tables will be compiled for each impact. The tables will consider project specific impacts, mitigation measures and residual impacts (impact after mitigation). The potential for cumulative impacts will be discussed under the section for potential impacts. The impact tables have been designed taking the following criteria into consideration:

The significance (quantification) of potential environmental impacts identified during scoping and identified during the specialist investigations have been determined using a ranking scale, based on the following:

- Occurrence
    - Probability of occurrence (how likely is it that the impact may occur?), and
    - Duration of occurrence (how long may it last?)

- Severity
    - Magnitude (severity) of impact (will the impact be of high, moderate or low severity?), and
    - Scale/extent of impact (will the impact affect the national, regional or local environment, or only that of the site?)

Each of these factors has been assessed for each potential impact using the following ranking scales:

Probability:	**Duration:**	**Scale:**	**Magnitude:**
5 – Definite/don't know 4 – Highly probable 3 – Medium probability 2 – Low probability 1 – Improbable 0 – None	5 – Permanent 4 - Long-term (ceases with the operational life) 3 - Medium-term (5-15 years) 2 - Short-term (0-5 years) 1 – Immediate	5 – International 4 – National 3 – Regional 2 – Local 1 – Site only 0 – None	10 - Very high/don't know 8 – High 6 – Moderate 4 – Low 2 – Minor

The significance of each potential impact was assessed using the following formula:

Significance Points (SP) = (Magnitude + Duration + Scale) x Probability

The maximum value is 100 Significance Points (SP). Potential social impacts were rated as high, moderate or low significance on the following basis:

- More than 60 significance points indicates high environmental significance.
- Between 30 and 60 significance points indicates moderate environmental significance.
- Less than 30 significance points indicates low environmental significance.

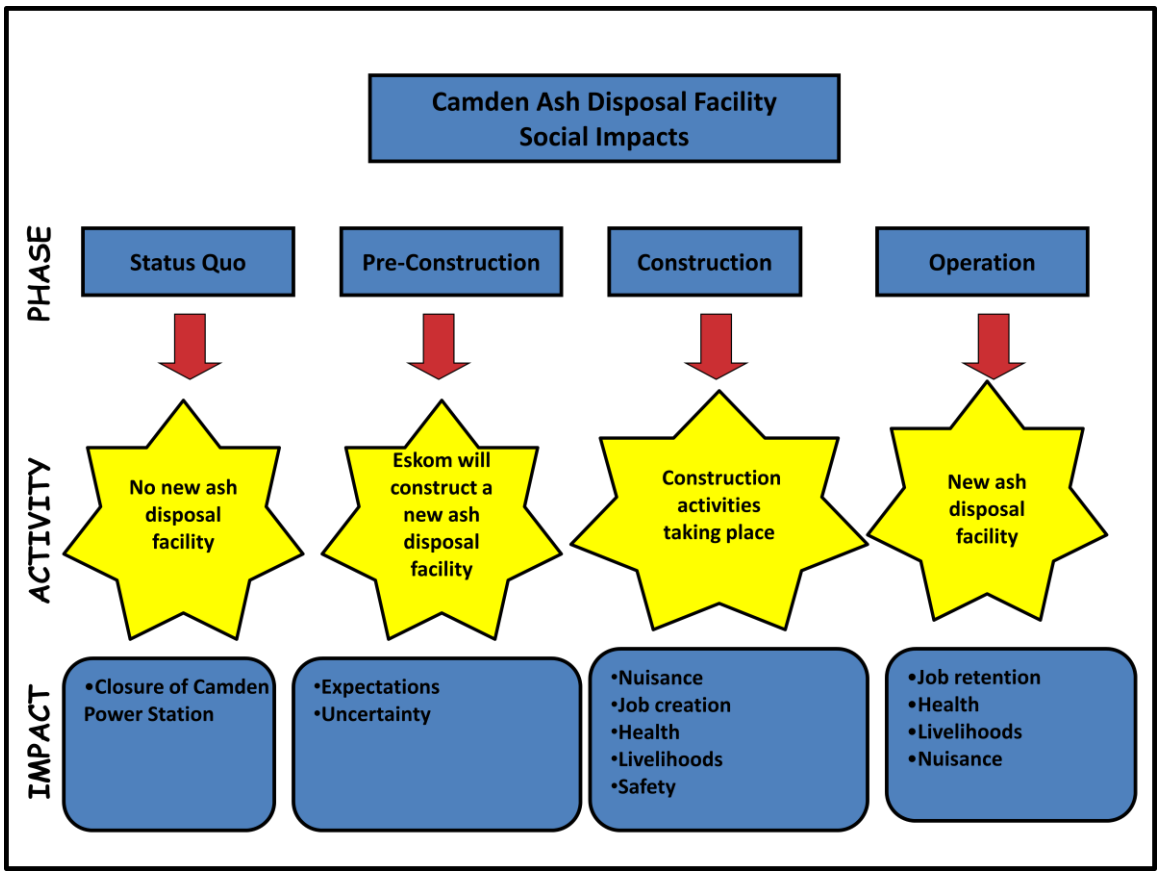
It must be stated that the impact tables and ratings have been adapted from the environmental sciences and that it is not always possible to compartmentalise the social impacts. For the sake of consistency this has been attempted, but it is not innate to social sciences. Allowance for the changing and adaptive nature of social impacts should be made when interpreting the impact tables. Another consideration is that the management and mitigation of some social impacts require input from a number of agencies, as these can only be addressed within the greater societal context. Proper mitigation and management would also take a number of years – this period would go far beyond the construction phase of the project. The focus of this report will therefore be on project-specific mitigation. The social impact will be discussed, but in some instances it is not possible for the contractor to implement the mitigation. The recommendations at the end of the report will focus on the best way to manage social impacts in the context of this project.

Impacts identified, mitigation and social management plan

The impacts will be discussed for each phase of the proposed project. The status quo, pre-construction, construction and operation phases will be discussed in this report. The closure phase will not be included, as a separate SIA should be conducted at the time when the ash storage facility is decommissioned – whether it is because it reached its capacity and a new ash storage facility must be commissioned, or whether it is because the power station is decommissioned.

Under each phase, a discussion of the impacts, an impact table and mitigation and management measures will be discussed. The following table represent a summary of the potential social impacts in each phase of the project:

Figure 21: Social Impacts in different phases of the project



5.1 Status quo

To maintain the status quo no new ash disposal facility should be constructed. This will take the Camden Power Station out of operation.

5.1.1 Potential impacts

Impacts will be experienced on local as well as national level. On a local level people will loose their jobs, or need to relocate to find other jobs within Eskom, should these jobs be available. For the purpose of this assessment the focus will be on the retrenchment process and the social and emotional impacts of changing jobs, schools and moving out of a community will not be discussed. On a national level, the existing electricity crisis will be enhanced and there will be economic spin-offs if there is not sufficient electricity supply for industrial role players.

5.1.2 Opportunity for mitigation/enhancement

These impacts should be avoided if at all possible. Mitigation of the shortage of electricity is addressed at a national level and falls outside the scope of this EIA. Should there be any job losses, people should be re-deployed within Eskom as far as possible. Retrenchment should be managed according to international best practice guidelines. The following measures are suggested:

- The IFC Good Practice Guidelines for managing retrenchment must be followed.
- A communication strategy must be put in place that will provide employees with the relevant information that may require and that will indicate what resources are available as well as how to access them. The strategy must be transparent and accessible.
- Management must be prepared for dealing with their own discomfort as well as that of employees in order to ensure production are kept up to the standard up to the point of closure. Managers must not only deal with their own retrenchment, but also that of the employees reporting to them. This can be achieved through workshops with management where they are prepared on how to deal with employees and they must also assess their own emotional understanding of the retrenchment decision.
- All relevant documentation should be available and management should be able to answer questions. All possible answers than can be asked should be researched and rehearsed. It is extremely important that management speak with one voice regarding the retrenchments and the reasoning behind it.
- Employees should be educated on understanding and dealing with their emotions as well as the emotional process that they can expect to go through.

- Counselling services should be available for each employee, as well as their family members. If possible this service should be expanded to include long-term contract workers. Counselling services should be available for some time after closure as some problems may only come to the surface after a period of time and failing to alleviate an individual's situation.

- Employees should have the opportunity to grieve the loss of their social networks and the social relationships that they have formed at work and may lose in their communities. There could be a formal farewell / closure function where employees are thanked for their contribution to Camden over the years and where they can get closure. It can also be considered to establish a forum where employees can keep in touch with one another, such as a page on Facebook. Although not all employees are computer literate, many have cell phones and may be able to connect in this way.

- An Employee Assistance Programme should be put in place to support employees during this difficult time. This programme should preferably be outsourced to an external company that specializes in retrenchment support.

- The Employee Assistance Programme should include the following elements (Hiestermann, 1999) and should prepare the employees realistically for life after retrenchment. Where possible long-term contract workers must be included:

    - Stress management (exercise, relaxation and good nutrition);

    - Intellectual skills (how to find a job, problem solving skills, knowledge resources in the company, goal setting skills, drafting a resume, planning skills and budgeting skills);

    - Interpersonal skills (assertive communication, improving self-image, improving body language, interview training and networking);

- Focused support must be provided to those belonging to vulnerable groups:

    - Married couples where both partners work for Camden: If a suitable position exists within the Eskom group, people belonging to this group should take preference.

- People with disabilities should also take preference. Where the disability is the result of an injury sustained while on duty and there are no suitable positions available for them, that person should receive compensation / pension from Eskom as if they were employed up to retirement.

- Employees who are due to retire within the next five years: These employees should be put on retirement with compensation / an old age pension as if they were employed up to retirement age. They should be in a similar position as if they have worked up to retirement age.

- Migrant workers should be supported should they wish to return to their place of origin. Support could be in the form of transport and relocation costs. When developing a plan to deal with issues related to migrant workers it is important to try to consult with either the workers or representatives of their community to determine the appropriate measures in these circumstances.

- Elementary workers must be assisted with searching and applying for new jobs.

- Employees must receive compulsory counselling on budgeting and financial planning, especially elementary workers that may be receiving large lump sums of cash as part of their retrenchment packages. They need to recognize the importance of planning and on how to stretch their available resources to last for as long as possible. Financial counselling regarding savings and the use of severance payments to the spouses of retrenched workers. Promoting the facilitation of savings and investment in alternative livelihoods can be a valuable service for affected communities.

- Eskom must make contact with state and private agencies such as local business chambers, etc. that will be aware of job opportunities in the region. They must contact other employers and explain the skills and abilities of the work force.

- Allow time off for employees to go for interviews and search for alternative employment and offer travel subsidies for workers to search for employment in other areas or assist with relocation.

- Eskom must consider employing outplacement consultants to help individuals with skills development and job searching, or to actually seek out alternative employment for the workers.
- Eskom must try to partner with local, provincial and national government agencies as important partners in assisting the communities that will be affected by unemployment. These partners may help provide social programs and subsidies for retraining.
- It must be considered to convert company facilities, infrastructure, and land post-closure to productive economic and social uses for the community.
- Current LED projects must be carried through or supported until they are sustainable.

Additional security measures should be put in place to protect company property. This security function should preferably be outsourced to a neutral company who is not affected by the closure of Camden.

5.1.3 Monitoring

Records of training and counselling should be kept. All steps in the retrenchment process must be recorded and included in the staff's personal files.

5.1.4 Impact table

Before mitigation								Mitigation	After mitigation				
Finding	Phase	Impact (+/-)	Magnitude	Duration	Scale	Probability	Significance	Means of mitigation	Magnitude	Duration	Scale	Probability	Significance
Loss of electricity capacity	Status Quo	Negative	10	5	4	5	95(High)	Do not close Camden Power Station	10	4	4	5	90 (High +)
Loss of jobs	Status Quo	Negative	10	2	2	5	70(High)	Re-deploy staff Follow IFC retrenchment guidelines Prepare staff for retrenchment Assist with finding alternative employment	8	2	2	4	48 (Moderate)

5.1.5 Cumulative impacts

Given the current economic situation in South Africa, it may not be possible for some people to find alternative employment and this may mean that they will be caught in a downward spiral of poverty.

5.1.6 Residual impacts

Unless people find alternative employment, loss of employment can cause a myriad of secondary and unintended impacts that may have a long-term negative effect in their lives.

5.2 Pre-construction phase

The pre-construction phase is the phase in which the EIA is conducted. This is usually when the proposed project is announced in the public domain. In this phase people are often uncertain about the potential impacts that may be experienced, and fear and anger are often expressed. This is also the phase where people start formulating certain expectations about the benefits of the project. The expectations are usually formed in their minds, but can also be fuelled by their interactions with the different role players in the process. The pre-construction phase continues until the actual construction of the proposed ash disposal facility commences. It is in this phase that contractors are appointed and specifications for the proposed construction activities are written. The pre-

construction phase will be discussed from a community perspective.

5.2.1 Potential impacts

Three potential sites have been identified. These sites are all currently used for agricultural purposes, and supplement the income of the people that is utilising the sites. The uncertainty about what site will be chosen impacts on the planning and livelihood strategies of the affected parties. They are unsure whether they must look for an alternative source of income and what the exact timeframes will be. Given the fact that there are crops on the lands, it must be considered that some planning is required in advance. The other relevant impact in the pre-construction phase is the expectations that may originate in surrounding communities regarding job creation and preferential procurement. Should these expectations not be met, it may cause social unrest in the community.

5.2.2 Opportunity for mitigation/enhancement

Uncertainty is one of the most serious social impacts that can occur. Its mental impact is difficult to measure, but the consequences can be severe. A lack of constructive communication will intensify this impact, and therefore it is recommended that Eskom compile a stakeholder communication strategy and appoint a community liaison officer at the Camden Power Station for the project. This will give the farming community a contact person who can help them to keep updated with the progress of the project and who can assist in answering their queries. The profile of this person should be in line with the stakeholder group – it should be someone who the community can relate to and build a healthy trust relationship. This will assist Eskom with maintaining a social licence to operate, since relationships between the Camden Power Station and its neighbours are reported to be good.

Expectations must be managed by communicating with the relevant role players ahead of time. They buy-in of local government (ward councillors) and community leaders are important. These parties must be informed about the nature and number of available opportunities. An article in the local news paper or interview on local radio stations can be used to make sure that the correct message is distributed and that a realistic picture of available opportunities is painted.

5.2.3 Monitoring

The community liaison officer must have formal interviews with landowners twice a year to discuss any concerns. This procedure must be written in the communications plan, which should be reviewed on a yearly basis. The communications plan must include sections on communications with

all relevant role players and strategies on how to communicate with the different role players.

5.2.4 Impact table

Before mitigation								Mitigation	After mitigation				
Finding	Phase	Impact (+/-)	Magnitude	Duration	Scale	Probability	Significance	Means of mitigation	Magnitude	Duration	Scale	Probability	Significance
Uncertainty	Pre-Construction	Negative	8	2	2	5	60(High)	Design and implement stakeholder communication strategy Employ stakeholder relationship manager	6	2	2	3	30 (Moderate)
Expectations	Pre-Construction	Negative	6	2	2	4	40(Moderate)	Communicate with key role players Design and implement stakeholder communication strategy	6	2	2	3	30 (Moderate +)

5.2.5 Cumulative impacts

As far as the uncertainty is concerned, the perceived impact will be cumulative to the general impact of economic instability due to the worldwide recession, and is therefore not specifically related to the proposed project. Expectations about job creation are also a current reality in South Africa and will be an issue in any project that may generate jobs.

5.2.6 Residual impacts

Expectations about job creation will remain in the construction phase of the project.

5.3 Construction phase

Most of the impacts will be experienced in the construction phase. This is the phase when there will be an influx of people in the area looking for employment. There will be additional traffic and construction activities will create dust, noise and other nuisances. Only the chosen site will be affected and the affected party will loose access to the land. Although most of the impacts in this phase are temporary, it is usually experienced as quite severe.

5.3.1 Potential impacts

The construction process will create a number of opportunities for low skilled people. The focus should be on local people who are not employed elsewhere. There is a risk that women will not be given equal opportunities to men because of the perception that they cannot do manual labour. This will have a negative impact on the number of opportunities for women. If local people, including women, are employed, this will have a very positive short-term impact, and if there is sufficient transfer of skills the positive impact can be extended.

Another positive impact is the indirect employment opportunities that will be created. These opportunities will be experienced in the industries that provide services to the construction team such as transport, hospitality and equipment rental etc. These opportunities can also be extended to local entrepreneurs such as women's groups that provide a laundry service or sell meals.

Another construction impact is around safety and security. This impact has a number of dimensions. The first dimension is the presence of strangers in a community. When there are more people around opportunistic criminals will find it easier to engage in their activities unnoticed. Farmers have expressed concern about the theft of livestock (especially sheep) and crops. Farm attacks are a reality in South Africa, and farmers are concerned about the presence of strangers on their farms. Their fears are not necessary related to the construction teams, but to the opportunistic criminals who may take advantage of the fact that there will be an increase in people moving in the area.

A second dimension of the impact on safety and security is the increase in sexually transmitted diseases that is often associated with construction activities. This is usually the result of men being far away from their homes and as a result engages in sexual activity with local women. There can be secondary impacts that will have a long-term impact on the host communities. Local women may provide sexual and housekeeping services to men in exchange for financial security – not to be confused with prostitution, but rather a livelihood strategy. This may result in pregnancies. There is a risk that these women may be left destitute when the construction workers move on to a new project in another area, leaving the local communities with the responsibility to ensure that these individuals survive. There could therefore be an increase in female-headed households in the area.

The construction process will impact on the livelihoods of some of the stakeholder groups. For some stakeholders in the surrounding communities this impact will be positive, because they will be employed and therefore meet the need of their dependants. Some of the farmers may lose access to productive land in the area. This may have a financial impact on these farmers. There is limited

productive agricultural land available to replace the lost land. Both the farmers who rent the properties indicated that they were interested in buying the land and expanding their businesses and both have been renting the farms for a long time. Without the rental properties they will lose significant income and need to find an alternative to supplement their livelihoods. This will also impact on their staff, since some they may need to dismiss labourers due to less production. These labourers may find it difficult to find new jobs and this will force them and their dependents into a downward spiral of poverty. New businesses take time to build up, and this may result in a decrease in quality of life and a negative impact on social wellbeing. The main issue is that similar land is not available in close proximity, and despite being compensated the farmers would still prefer to rather have access to the existing property. Buying new land will created extra transport, operational and safety issues.

Environmental nuisances such as an increase in dust and noise due to construction activities and an increase in the number of heavy vehicles in the area may cause short-term frustration, and in some sensitive individuals even health impacts such as asthma, sinusitis or allergies. This impact is already reported to be a problem.

5.3.2 Opportunity for mitigation/enhancement

Local unemployed people must be given preference in the recruitment process. Contractors must refrain from employing people who are currently employed in permanent positions. There must be an employment desk. A standard recruitment policy must be implemented. The local recruitment process must be agreed with local leadership. This process must then be advertised in an accessible way – radio advertisements, community meetings and press releases in local languages. No false expectations must be created and it must be underlined that the employment opportunities are specifically for the unemployed. A percentage of the workforce must be female.

Indirect employment/entrepreneurship opportunities must be enhanced. Eskom must support local entrepreneurs as far as possible through local procurement. If possible, skills development should form part of the initiative.

Given the scarcity of land in the area a notice period of at least six months should be given to allow lessees to look for new properties to lease. Current lease agreements must be respected and the correct legal procedure must be followed if these agreements cannot be honoured. Compensation to land owners must enable them to replace what they have lost and allow for financial losses that will be associated with losing the properties. If there are crops on the land they should be

compensated for the loss of crops.

Some social impacts are difficult to mitigate on a project level, as proper mitigation would require input from government or other agencies outside the project area. It would not be practical for a project proponent to manage impacts that occur in a greater societal context. The mitigation of these impacts is therefore not the sole responsibility of the proponent, but other agencies that contribute to these impacts should also contribute to their mitigation.

Construction workers must wear identity tags with photographs. A contact person who community members can phone if they have enquiries about the construction team must be identified. All vehicles must be clearly marked.

HIV/AIDS awareness training must form part of the induction of staff. Condoms must be freely available on site. The workforce must be discouraged from engaging in casual sexual relationships with local people and informed of the consequences.

Environmental nuisances that occur during construction will be temporary. Given the fact that there are existing impacts from Camden Power Station, many of the nuisances will be cumulative. Where possible dust suppression must be used (technical measures included in the relevant specialist study). Construction vehicles must travel slowly and loads should be covered where possible. No construction work should take place on Sundays, public holidays and during the night. Construction vehicles must travel outside peak traffic hours where possible.

Impacts related to dust already take place and the operation of the system will add to these impacts. The nuisance effects of dust can be subjective and are difficult to measure in any quantitative or objective way. They are also very dependent on the sensitivity of the receiving environment. As a result, the effects cannot be controlled or managed easily through the use of air quality guidelines, which is the approach taken with most other air contaminants.

Best practice industry guidelines should be followed to address the dust problem. Eskom must have a user-friendly complaints procedure in place to deal with specific complaints, and this procedure should be public knowledge –it can be advertised in local newspapers or posters explaining the procedures can be put up in public places.

5.3.3 Monitoring

Eskom must keep records of the number of locally employed people, clearly stating the number and

gender of the workforce. The community liaison officer should ensure that local partnerships are formed and managed. The HIV prevention requirements must be included in the Health and Safety system of the contractor and monitored with this system. This requirement must be written in the specifications of the contract to ensure it becomes a contractual requirement. The community liaison officer must ensure that recruitment protocols are followed.

5.3.4 Impact table

Before mitigation								Mitigation	After mitigation				
Finding	Phase	Impact (+/-)	Magnitude	Duration	Scale	Probability	Significance	Means of mitigation	Magnitude	Duration	Scale	Probability	Significance
Local job opportunities	Construction	Positive	8	2	2	4	44 (Moderate)	Employ local people Employ a minimum percentage of women Standardise a recruitment process Involve local communities in developing the recruitment process	10	2	2	4	56 (Moderate)
Indirect employment opportunities	Construction	Positive	8	2	2	4	48 (Moderate)	Create opportunities for local entrepreneurs Support local entrepreneurs Create an enabling environment for the entrepreneurs to benefit financially Combine support with skills development initiatives	10	2	2	5	70 (High)
Loss of livelihoods	Construction	Negative	10	2	1	5	65 (High)	Give adequate notice Compensate for loss of land Follow correct legal processes regarding existing lease agreements Compensate for loss of crops	8	2	1	5	55 (Moderate)
Safety of land owners	Construction	Negative	8	2	2	4	48 (Moderate)	Contractors wear identification tags Mark vehicles Appoint Community Liaison Officer	6	2	2	3	30 (Moderate)

Increase in STDs	Construction	Negative	8	3	2	4	52 (Moderate)	STD awareness training part of induction Condoms available	6	3	3	3	36 (Moderate)
Environemtal nuisances	Construction	Negative	8	4	2	4	56 (Moderate)	Dust suppression Travel restrictions Complaints procedures	6	4	2	3	36 (Moderate)

5.3.5 Cumulative impacts

Cumulative impacts on local entrepreneurs will be positive and assist in developing their businesses further. Cumulative impacts on the agriculture industry may be negative and in the longterm impact on food production. Environmental impacts such as dust already occur, and the project will add to these impacts.

5.3.6 Residual impacts

Residual impacts will be a positive impact on skills development and economic growth for small-scale entrepreneurs. There may be a negative impact on workers who were temporarily employed and lost their jobs, in that they might struggle to find new employment opportunities. There will be a longterm negative impact on the agriculture industry and food production. Some of the impacts cannot be mitigated to such an extent that they are no longer significant. A number of the impacts will be short term, and disappear after the construction phase. STDs and HIV/AIDS are another residual impact. For all practical purposes this is a permanent impact that will be felt on an individual level. Unplanned pregnancies resulting in female-headed households are also a long-term residual impact that the proponent can do little about.

5.4 Operational phase

The operational phase is the phase of the project where the ash disposal facility becomes operational. Given the fact that Camden Power Station is an existing facility, many of the impacts are experienced already. The impacts are briefly discussed in this section, and mitigation suggested will

be additional or complementary to existing operational measures that are already in place.

5.4.1 Potential impacts

The most positive impact associated with the operation of the Camden Ash Disposal Facility will be the retention of the jobs of the staff and the stability in the supply of electricity. Environmental nuisances, more specifically dust, will continue to be an issue, since dust is an innate by-product of an ash storage facility. The dust will potentially be the biggest source of perceived health-related impacts, as well as the impact that it can potentially have on the quality of the crops in the surrounding agricultural area. The impact on the crops may affect their quantity and quality, and therefore this impact may spill over into the livelihoods of the affected farmers.

5.4.2 Opportunity for mitigation/enhancement

The retention of jobs and security of electricity supply do not require mitigation on project level. The dust and other environmental nuisances should be managed according to the best practice standard in those industries. By doing so, the social impact will also be managed. A complaints procedure and community liaison officer should be in place to ensure that the communication process between the farmers and Camden Power Station stays open and transparent.

5.4.3 Monitoring

The community liaison officer must have formal interviews with landowners twice a year to discuss any concerns. .

5.4.4 Impact table

Before mitigation								Mitigation	After mitigation				
Finding	**Phase**	**Impact (+/-)**	**Magnitude**	**Duration**	**Scale**	**Probability**	**Significance**	**Means of mitigation**	**Magnitude**	**Duration**	**Scale**	**Probability**	**Significance**
Retention of jobs	Operation	Positive	10	4	2	5	80 (High)	No mitigation required	10	4	2	5	80 (High)
Management of environmental aspects that can affect social environment	Operation	Negtive	8	4	2	5	80 (High)	Environmental Management in place Complaints Procedure Community Liaison Officer	8	4	2	4	56(Moderate)

5.4.5 Cumulative impacts

Cumulative impacts may result from the agricultural practices, ambient environment and other industries in the area.

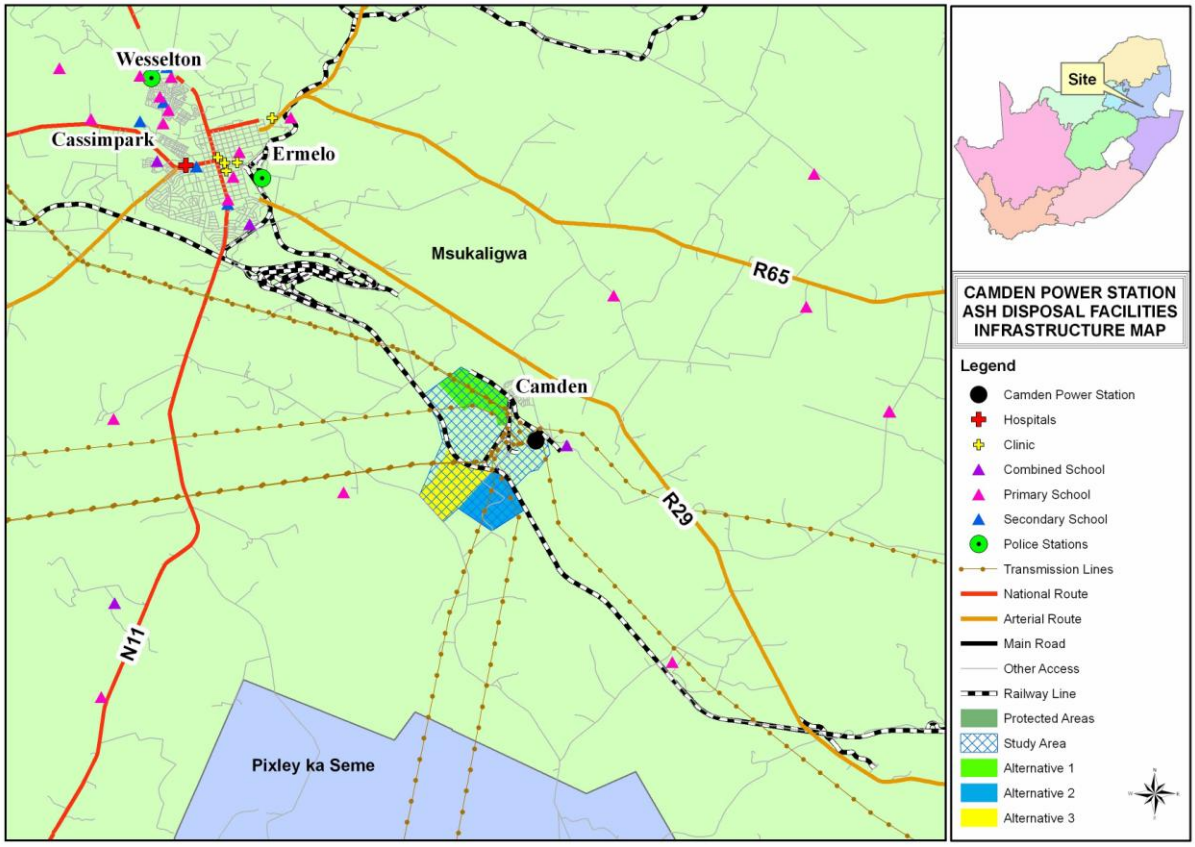
5.4.6 Residual impacts

There may be some residual environmental impacts, but the management of those impacts will be discussed in the environmental studies.

6 Analysis of alternatives

Three alternative sites was analysed for the purpose of the SIA. Figure 22 below indicates the three sites.

Figure 22: Site alternatives the project



Alternative 1 is rented to Mr. Jan van Staden. He farms with maize and soya beans and have about 600 cattle that grazes on the site. He has been renting it for the past six years. He wants to buy the property, but the owners do not want to sell it, as they get a steady income from the rental money. There is five years left on his rental agreement with the option to continue renting it. If he looses the property he would have to make his business smaller unless he can find an alternative property in close proximity. He has been farming in the area for the past 10 or 11 years. There are no farm workers residing on the site – they live on his farm and in town. Mr. van Staden also has a business in town.

Alternative 2 belongs to Mr. Lood de Jager. The property has been in his family for more than 100 years, and his sons are farming with him – the intension is that they will take over the farm when he

retires. He earns his livelihood by farming, and it also supports his children and their families. According to Mr. de Jager Alternative 2 is situated on his most productive agricultural land, and is the area in question some of the best agricultural land in the district. He uses the land for cultivation and winter grazing for his livestock. Mr. de Jager indicated that there are burial sites on Alternative 2.

Mr. Lood de Jager rents Alternative 3. It forms an economic unit with Alternative 2. He has been renting the land for the past 10 years, and wants to buy it. The owner is willing to sell the property, but given the current uncertainty about the placement of the ash disposal facility it is not seen as a good time for such a transaction. Mr. de Jager indicated that there are burial sites on Alternative 3 as well. Should Mr. de Jager loose either of the sites, it will take away a large part of the economic unit. He would need to make his business smaller with approximately 200 cattle and 100 sheep. He employs 24 farm workers, each with a family of between four and five people, of which approximately 20% may loose their jobs if he is forced to make his business smaller.

All the alternatives will result in an economic impact on the affected farmer. This is intensified in the cases where they rent the land – the implication is that the owners will be compensated for the property, but the person who will loose most is the person who rent the property, as he will loose the income generated by his activities on the property and will not be compensated for it. Given that in both cases the land has been rented for an extended time, this impact may be felt more intensely. From a legal and business perspective rental agreements can be terminated and the lessee can find an alternative property to lease. The recommendation of the most preferred alternative form a social perspective is based on the following:

- Number of people whose livelihoods to be affected;
- Cultural and emotional attachment to the land and aspirations for the future; and
- Impact on business unit.

Based on these factors, Alternative 1 is recommended as the most preferred alternative from a social perspective. Alternative 3 is seen as the next option, based on the fact that the owner is willing to sell and not actively using the land himself. Alternative 2 is the least preferred option, based on the emotional, cultural and economic value to the farmer and the fact that the emotional and cultural aspects cannot be compensated for. It must be considered that Alternative 2 and 3 forms an economic unit.

7 Conclusions and recommendations

When considering the social impacts of the ash disposal facility, the importance of Camden Power Station on a national scale must be considered. Electricity supply is a critical issue in South Africa at the moment and the proposed project will add to the stability of the service. From a greater societal perspective the project will thus have a positive impact, as Camden Power Station is of strategic importance in South Africa. The power station employs a significant number of people. Neighbours of the power station report good relationships. The new ash disposal facility will extend the life of the power station, and in the current economic conditions the No-Go option will have dire social consequences. The biggest impact on the surrounding communities will be during the construction phase of the project, as communities are already living with the operational impacts. These impacts will be of a temporary nature, and most of them can be managed. The adjacent farmers will experience permanent impacts on their livelihoods, depending which alternative is chosen. Based on the SIA the following general recommendations are made:

- Compile and implement a community relations strategy;
- Appoint a community liaison officer to assist with management of social impacts and dealing with community issues;
- Consult with the directly affected communities and note special concerns;
- Install proper grievance and communication systems;
- Employ and procure locally as far as possible;
- Honour existing lease agreements or resolve to satisfaction of all parties involved;
- Make sure construction teams can be identified easily; and
- Make monitoring activities part of the Safety, Health and Environmental systems

The need for the proposed project is undeniable in the current economic conditions. It is therefore recommended that the project proceed with Alternative 1 as the preferred alternative. The mitigation measures should be adhered to to ensure the proper management and mitigation of impacts.

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