

ENVIRONMENTAL IMPACT ASSESSMENT PROCESS SCOPING REPORT

METALS INDUSTRIAL CLUSTER NEAR KURUMAN NORTHERN CAPE PROVINCE

MARCH 2016

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PROJECT DETAILS

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PURPOSE OF THE SCOPING REPORT

The Northern Cape Department of Economic Development and Tourism propose the establishment of a Metals Industrial Cluster on Portion 6253 of Erf 1 located ~2km south east of the town of Kuruman. The proposed site falls under the jurisdiction of the Ga-Segonyana Local Municipality and within the greater John Taolo Gaetsewe District Municipality in the Northern Cape Province. The Metals Industrial Cluster (hereafter referred to as the Cluster) is planned to be an industrial park anchored around steel and metals manufacturing while allowing for other related industries to be located and operate within the Cluster.

The Northern Cape Department of Economic Development and Tourism has appointed Savannah Environmental as the independent environmental consultant to undertake the Environmental Impact Assessment (EIA) for the proposed Metals Industrial Cluster. The EIA process is being undertaken in accordance with the requirements of the EIA Regulations of December 2014 (of GNR982) promulgated in terms of the National Environmental Management Act (NEMA; Act No. 107 of 1998).

This Scoping Report represents the findings of the Scoping Phase of the EIA process and contains the following sections:

- » **Chapter 1** provides background of the proposed Metals Industrial Cluster and the environmental impact assessment process.
- » **Chapter 2** describes the components of the proposed project.
- » **Chapter 3** outlines the process which was followed during the Scoping Phase of the EIA process.
- » **Chapter 4** describes the existing biophysical and socio-economic environment affected by the proposed project.
- » **Chapter 5** provides a desktop assessment of the potential environmental and social impacts associated with the development of the Metals Industrial Cluster.
- » **Chapter 6** presents the conclusions of the scoping evaluation.
- » **Chapter 7** describes the Plan of Study for the EIA phase.
- » **Chapter 8** provides references used in the compilation of this Scoping Report.

INVITATION TO COMMENT ON THE SCOPING REPORT

This **Scoping Report** is available for review from **01 April 2016–04 May 2016** at the **Kuruman Public Library**, which is located in the vicinity of the proposed project area.

The report is also available for download on:

» www.savannahsa.com

Please submit your comments to
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The due date for comments on the Scoping Report is 04 May 2016

Comments can be made as written submission via fax, post or e-mail.

EXECUTIVE SUMMARY

Background

The Northern Cape Department of Economic Development and Tourism propose the establishment of a Metals Industrial Cluster on Portion 6253 of Erf 1 located ~2km south east of the town of Kuruman. The proposed site falls under the jurisdiction of the Ga-Segonyana Local Municipality and within the greater John Taolo Gaetsewe District Municipality in the Northern Cape Province. The Metals Industrial Cluster is planned to be an industrial park anchored around steel and metals manufacturing while allowing for other related industries to be located and operate within the Cluster.

The Cluster is expected to be developed and transition through four phases as follows: i) Phase 1 which is considered to be short term; ii) Phase 2 which is considered to be medium term; iii) Phase 3 which is considered to be long term; and iv) Phase 4 which is intended to cater to the expansion of the Cluster beyond a 20-year timeframe planned for the 3 phases.

The Cluster will consist predominantly of Small, Medium and Micro-sized Enterprises (SMME) and Small and Medium Enterprises (SME) companies with an increasing number of larger firms over time. These enterprises could possibly be of a light, medium or heavy industrial nature.

The Cluster will include basic infrastructure that will be required for the operation of the development. The basic infrastructure to be constructed includes:

- » Buildings (warehousing, administrative buildings, skills development centre, student accommodation etc.);
- » Access roads including main access to the Cluster and internal access roads;
- » Landscaping;
- » Parking;
- » Fencing;
- » Infrastructure relating to bulk services including electricity, water, sewage and waste water; and
- » Security.

Any entity or company (CMF) planning to be located within the Metals Industrial Cluster will be required to make provision for the specific infrastructure that would be required for the operation of that specific entity, and the undertaking of its own permits and authorisations in terms of the legal requirements would be required.

The overarching objective of the Metals Industrial Cluster is to diversify economic activities and encourage development in the Northern Cape Province while maximising metals-related production through the development of a cluster with competitive but complimentary industries. In order

to meet these objectives, local level environmental and planning issues will be assessed through the EIA with the aid of site-specific specialist studies in order to delineate areas of sensitivity within the site; this will serve to inform and optimise the layout of the cluster development.

The establishment of the Metals Industrial Cluster forms part of a drive for industrial and economic development and growth within the Northern Cape Province.

An EIA process and public participation process is being undertaken for the development of the Metals Industrial Cluster. The nature and extent of the development, as well as potential environmental impacts associated with the establishment, operation and decommissioning phases are explored in more detail in this Scoping Report.

Project Location

Portion 6253 of Erf 1 is located ~2km south east of Kuruman and falls within the urban edge of the town. The Cluster will be developed within full extent of the property, with an extent of 47ha. The site has been identified by the Department as a suitable location of sufficient extent with the potential for the development of a Metals Industrial Cluster.

Evaluation of the Proposed Project

Through the undertaking of the scoping study specialist input was provided in order to delineate areas of potential sensitivity that need to be avoided by the development of the Metals Industrial Cluster. These specialist studies (undertaken on a desktop level) consider the impact of the development on the ecological, archaeological and social features within and around the site within the site establishment and operation phases of the proposed development.

The development of the Metals Industrial Cluster will not have a significant ecological impact on the site due to the fact that no ecologically sensitive habits occur within the site. From the archaeological study undertaken, one potential area of interest has been identified within the site. This area of interest contains structures and could potentially be a dwelling, however it was deduced that the structures were erected after 2006 and before 2010. The socio-economic spinoffs and growth as a result of the establishment and operation of the Metals Industrial Cluster will be the most significant positive social impact associated with the development. The social positive impacts stretch beyond just the proposed site and the town of Kuruman.

It should be noted that the potential impacts identified within this scoping phase is primarily based on desktop study, through the use of existing

information. These findings will be ground-truthed within the following EIA phase and assessed in more detail with the help of field surveys and direct observations.

At this stage, there are no fatal flaws associated with the proposed Metals Industrial Cluster. Further investigation is required in order to fully assess the anticipated impacts as outlined in the specialist reports. The proposed site and any associated impacts should be considered in the EIA phase. It is recommended that the proposed site be considered in an EIA phase assessment according to the Plan of Study contained in this report.

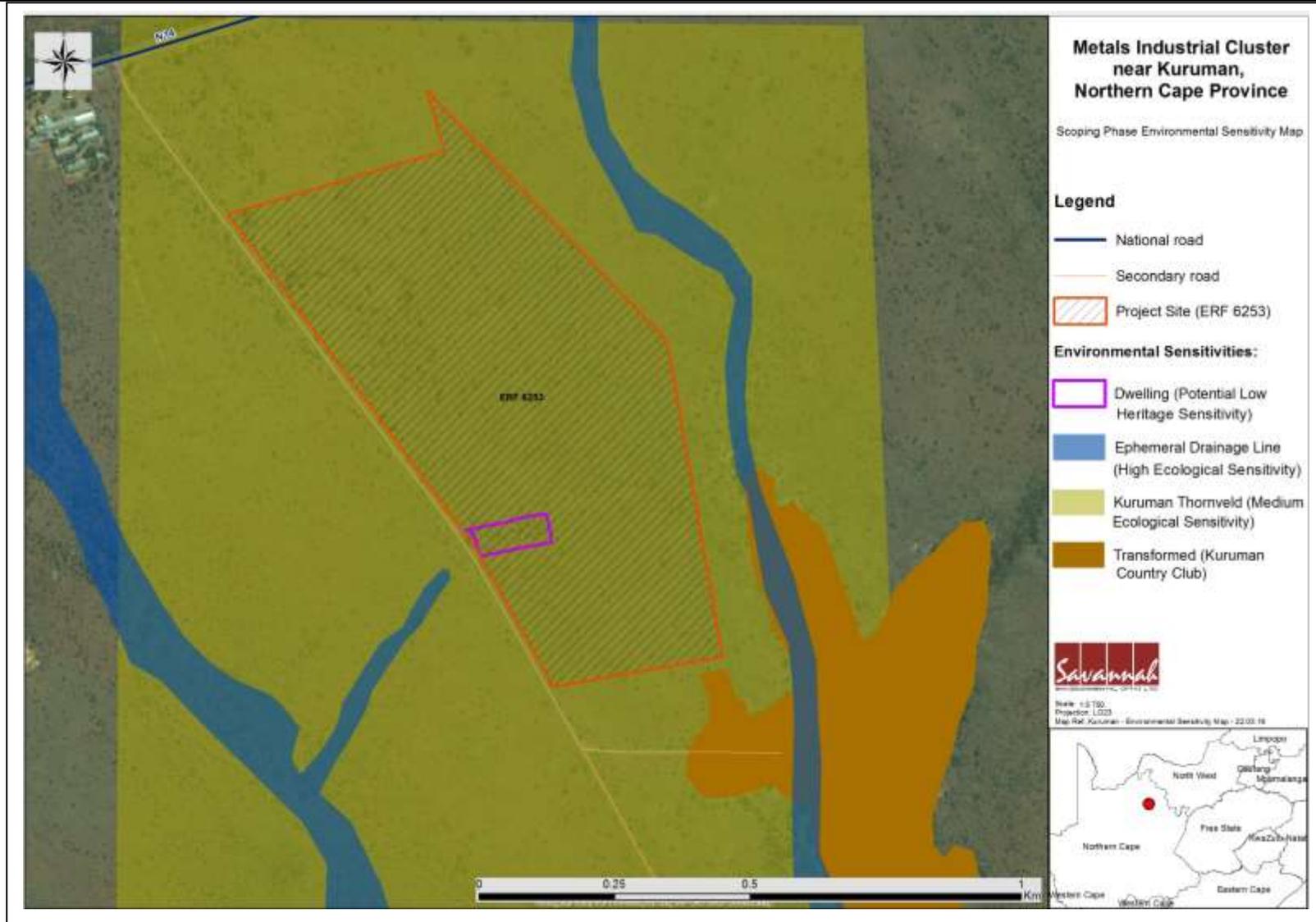


Figure 1: Scoping Phase Environmental Sensitivity Map of the proposed Metals Industrial Cluster site.

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DEFINITIONS AND TERMINOLOGY

Alternatives: Alternatives are different means of meeting the general purpose and need of a proposed activity. Alternatives may include location or site alternatives, activity alternatives, process or technology alternatives, temporal alternatives or the 'do nothing' alternative.

Archaeological material: Remains resulting from human activities which are in a state of disuse and are in or on land and which are older than 100 years, including artefacts, human and hominid remains and artificial features and structures.

Article 3.1 (*sensu* Ramsar Convention on Wetlands): "Contracting Parties "shall formulate and implement their planning so as to promote the conservation of the wetlands included in the List, and as far as possible the wise use of wetlands in their territory"".(Ramsar Convention Secretariat. 2004. Ramsar handbooks for the wise use of wetlands. 2nd Edition. Handbook 1. Ramsar Convention Secretariat, Gland, Switzerland.) (see <http://www.ramsar.org/>)

Calcrete: A soft sandy calcium carbonate rock related to limestone which often forms in arid areas.

Cumulative impacts: Impacts that result from the incremental impact of the proposed activity on a common resource when added to the impacts of other past, present or reasonably foreseeable future activities (e.g. discharges of nutrients and heated water to a river that combine to cause algal bloom and subsequent loss of dissolved oxygen that is greater than the additive impacts of each pollutant). Cumulative impacts can occur from the collective impacts of individual minor actions over a period of time and can include both direct and indirect impacts.

Direct impacts: Impacts that are caused directly by the activity and generally occur at the same time and at the place of the activity (e.g. noise generated by blasting operations on the site of the activity). These impacts are usually associated with the construction, operation or maintenance of an activity and are generally obvious and quantifiable

Disturbing noise: A noise level that exceeds the ambient sound level measured continuously at the same measuring point by 7 dB or more.

'Do nothing' alternative: The 'do nothing' alternative is the option of not undertaking the proposed activity or any of its alternatives. The 'do nothing'

alternative also provides the baseline against which the impacts of other alternatives should be compared.

Early Stone Age: A very early period of human development dating between 300 000 and 2.6 million years ago.

Endangered species: Taxa in danger of extinction and whose survival is unlikely if the causal factors continue operating. Included here are taxa whose numbers of individuals have been reduced to a critical level or whose habitats have been so drastically reduced that they are deemed to be in immediate danger of extinction.

Endemic: An "endemic" is a species that grows in a particular area (is endemic to that region) and has a restricted distribution. It is only found in a particular place. Whether something is endemic or not depends on the geographical boundaries of the area in question and the area can be defined at different scales.

Environment: the surroundings within which humans exist and that are made up of:

- i. the land, water and atmosphere of the earth;
- ii. micro-organisms, plant and animal life;
- iii. any part or combination of (i) and (ii) and the interrelationships among and between them; and
- iv. the physical, chemical, aesthetic and cultural properties and conditions of the foregoing that influence human health and well-being.

Environmental Impact: An action or series of actions that have an effect on the environment.

Environmental impact assessment: Environmental Impact Assessment (EIA), as defined in the NEMA EIA Regulations and in relation to an application to which scoping must be applied, means the process of collecting, organising, analysing, interpreting and communicating information that is relevant to the consideration of that application.

Environmental management: Ensuring that environmental concerns are included in all stages of development, so that development is sustainable and does not exceed the carrying capacity of the environment.

Environmental management programme: An operational plan that organises and co-ordinates mitigation, rehabilitation and monitoring measures in order to guide the implementation of a proposal and its on-going maintenance after implementation.

Fossil: Mineralised bones of animals, shellfish, plants and marine animals. A trace fossil is the track or footprint of a fossil animal that is preserved in stone or consolidated sediment.

Heritage: That which is inherited and forms part of the National Estate (Historical places, objects, fossils as defined by the National Heritage Resources Act of 2000).

Indigenous: All biological organisms that occurred naturally within the study area prior to 1800

Indirect impacts: Indirect or induced changes that may occur as a result of the activity (e.g. the reduction of water in a stream that supply water to a reservoir that supply water to the activity). These types of impacts include all the potential impacts that do not manifest immediately when the activity is undertaken or which occur at a different place as a result of the activity.

Interested and Affected Party: Individuals or groups concerned with or affected by an activity and its consequences. These include the authorities, local communities, investors, work force, consumers, environmental interest groups and the general public.

Late Stone Age (LSA): In South Africa this time period represents fully modern people who were the ancestors of southern African Khoekhoen and San groups (40 000 – 300 years ago).

Middle Stone Age (MSA): An early period in human history characterised by the development of early human forms into modern humans capable of abstract thought process and cognition 300 000 – 40 000 years ago.

Midden: A pile of debris or dump (shellfish, stone artefacts and bone fragments) left by people after they have occupied a place.

Miocene: A geological time period (of 23 million - 5 million years ago).

Natural properties of an ecosystem (*sensu* Convention on Wetlands): Defined in Handbook 1 as the "...physical, biological or chemical components, such as soil, water, plants, animals and nutrients, and the interactions between them". (Ramsar Convention Secretariat. 2004. Ramsar handbooks for the wise use of wetlands. 2nd Edition. Handbook 1. Ramsar Convention Secretariat, Gland, Switzerland.) (see <http://www.ramsar.org/>)

Palaeontological: Any fossilised remains or fossil trace of animals or plants which lived in the geological past, other than fossil fuels or fossiliferous rock intended for industrial use, and any site which contains such fossilised remains or trace.

Pleistocene: A geological time period (of 3 million – 20 000 years ago).

Pliocene: A geological time period (of 5 million – 3 million years ago).

Rare species: Taxa with small world populations that are not at present Endangered or Vulnerable, but are at risk as some unexpected threat could easily cause a critical decline. These taxa are usually localised within restricted geographical areas or habitats or are thinly scattered over a more extensive range. This category was termed Critically Rare by Hall and Veldhuis (1985) to distinguish it from the more generally used word "rare".

Red data species: Species listed in terms of the International Union for Conservation of Nature and Natural Resources (IUCN) Red List of Threatened Species, and/or in terms of the South African Red Data list. In terms of the South African Red Data list, species are classified as being extinct, endangered, vulnerable, rare, indeterminate, insufficiently known or not threatened (see other definitions within this glossary).

Significant impact: An impact that by its magnitude, duration, intensity or probability of occurrence may have a notable effect on one or more aspects of the environment.

Sustainable Utilisation (*sensu* Convention on Wetlands): Defined in Handbook 1 as the "human use of a wetland so that it may yield the greatest continuous benefit to present generations while maintaining its potential to meet the needs and aspirations of future generations". (Ramsar Convention Secretariat. 2004. Ramsar handbooks for the wise use of wetlands. 2nd Edition. Handbook 1. Ramsar Convention Secretariat, Gland, Switzerland.) (refer <http://www.ramsar.org/>).

Structure (historic): Any building, works, device or other facility made by people and which is fixed to land, and includes any fixtures, fittings and equipment associated therewith. Protected structures are those which are over 60 years old.

ABBREVIATIONS AND ACRONYMS

BID	Background Information Document
CBOs	Community Based Organisations
CDM	Clean Development Mechanism
CO ₂	Carbon dioxide
DEA	National Department of Environmental Affairs
DENC	Northern Cape Department of Environment and Nature Conservation
DMR	Department of Mineral Resources
DOT	Department of Transport
DWS	Department of Water and Sanitation
EIA	Environmental Impact Assessment
EMPr	Environmental Management Programme
GIS	Geographical Information Systems
GG	Government Gazette
GN	Government Notice
I&AP	Interested and Affected Party
IDP	Integrated Development Plan
IEP	Integrated Energy Planning
km ²	Square kilometres
kV	Kilovolt
m ²	Square meters
m/s	Meters per second
MW	Mega Watt
NEMA	National Environmental Management Act (Act No 107 of 1998)
NHRA	National Heritage Resources Act (Act No 25 of 1999)
NGOs	Non-Governmental Organisations
NIRP	National Integrated Resource Planning
NWA	National Water Act (Act No 36 of 1998)
SAHRA	South African Heritage Resources Agency
SANRAL	South African National Roads Agency Limited
SDF	Spatial Development Framework
SIA	Social Impact Assessment

INTRODUCTION

CHAPTER 1

The Northern Cape Department of Economic Development and Tourism propose the establishment of a Metals Industrial Cluster on Portion 6253 of Erf 1 located ~2km south east of the town of Kuruman (refer to **Figure 1.1**). The proposed site falls under the jurisdiction of the Ga-Segonyana Local Municipality and within the greater John Taolo Gaetsewe District Municipality in the Northern Cape Province. The Metals Industrial Cluster (hereafter referred to as the Cluster) is planned to be an industrial park anchored around steel and metals manufacturing while allowing for other related industries to be located and operate within the Cluster.

The Cluster is expected to be developed and transition through four phases as follows: i) Phase 1 which is considered to be short term; ii) Phase 2 which is considered to be medium term; iii) Phase 3 which is considered to be long term; and iv) Phase 4 which is intended to cater to the expansion of the Cluster beyond a 20-year timeframe planned for the 3 phases.

The establishment of the Metals Industrial Cluster forms part of a drive for industrial and economic development and growth within the Northern Cape Province.

From a regional perspective, the greater Kuruman area and the Northern Cape Province are considered favourable for the development of an industrial cluster of this nature by virtue of the need and desirability for industrial development and economic growth in the Northern Cape Province. The establishment of a Metals Industrial Cluster in the Kuruman area and the site is considered as a viable and desirable opportunity to see the realisation of long-term economic and social benefits.

The nature and extent of this development, as well as potential for environmental impacts associated with the development are explored in more detail in this scoping report.

1.1. Requirement for an Environmental Impact Assessment Process

The establishment and operation of the proposed Metals Industrial Cluster is subject to the requirements of the EIA Regulations published in terms of Section 24(5) of the National Environmental Management Act (NEMA) No 107 of 1998. This section provides a brief overview of the EIA Regulations and their application to the Cluster.

NEMA is the national legislation that provides for the authorisation of 'listed activities'. In terms of Section 24(1) of NEMA, the potential impact on the environment associated with these activities must be considered, investigated, assessed and reported on to the competent authority that has been charged by NEMA with the responsibility of granting environmental authorisations. The competent authority for this application is the Northern Cape Department of Environment and Nature Conservation (DENC).

The need to comply with the requirements of the EIA Regulations ensures that the competent authority is provided with the opportunity to consider the potential environmental impacts of a project early in the project development process and to assess if potential environmental impacts can be avoided, minimised or mitigated to acceptable levels. Comprehensive, independent environmental specialist studies are required in accordance with the EIA Regulations to provide the competent authority with sufficient information in order to make an informed decision. The Northern Cape Department of Economic Development and Tourism has appointed Savannah Environmental as the independent environmental consultant to conduct the required EIA process for the proposed Metals Industrial Cluster.

An EIA is an effective planning and decision-making tool for the project applicant as it allows for the identification and management of potential environmental impacts. It provides the opportunity for the Department to be forewarned of potential environmental issues, and allows for resolution of the issues reported on in the Scoping and EIA Reports as well as dialogue with interested and affected parties (I&APs).

The EIA process comprises two phases – i.e. Scoping and Impact Assessment - and involves the identification and assessment of environmental impacts through specialist studies, as well as public participation. The process followed in these two phases is as follows:

- » The **Scoping Phase** includes the identification and description of potential impacts associated with the proposed development through a desktop study and consultation with affected parties and key stakeholders. Areas of sensitivity within the site is identified and delineated on the basis of this desktop study in order to identify any environmental fatal flaws, and sensitive or no-go areas. Following a review period of the Scoping Report, this phase culminates in the submission of a Final Scoping Report and Plan of Study for EIA to the competent authority for acceptance and approval.
- » The **EIA Phase** involves a detailed assessment of potentially significant positive and negative impacts (direct, indirect, and cumulative) identified in the Scoping Phase. This phase includes detailed specialist investigations (including field surveys) and public consultation. Following a public review

period of the EIA report, this phase culminates in the submission of a Final EIA Report and an Environmental Management Programme (EMPr), including recommendations of practical and achievable mitigation and management measures, to the competent authority for review and decision-making.

1.2. Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This Scoping report has been prepared in accordance with the requirements of the EIA Regulations published on 08 December 2014 promulgated in terms of Chapter 5 of the National Environmental Management Act (Act No 107 of 1998). This chapter of the scoping report includes the following information required in terms of Appendix 2: Content of the Scoping Report:

Requirement	Relevant Section
(a)(i) the details of the EAP who prepared the report and (ii) the expertise of the EAP to carry out scoping procedures; including a curriculum vitae	The details and expertise of the EAP who has undertaken this scoping report is included in section 1.3 and Appendix A of this scoping report.
(b) the location of the activity, including (i) the 21 digit Surveyor General code of each cadastral land parcel; (ii) where available, the physical address and farm name and (iii) where the required information in items (i) and (ii) is not available, the coordinates of the boundary of the property or properties	The location of the proposed Metals Industrial Cluster is included in section 1.2, and within Table 1.1.
(c) a plan which locates the proposed activity or activities applied for at an appropriate scale, or, if it is (i) a linear activity, a description and coordinates of the corridor in which the proposed activity or activities is to be undertaken; or (ii) on land where the property has not been defined, the coordinates within which the activity is to be undertaken	A locality map illustrating the proposed site for the development of the Metals Industrial Cluster is included under section 1.1 as Figure 1.1 and in Appendix B.

1.3. Overview of the project

The Northern Cape Department of Economic Development and Tourism has identified a need for economic growth and development in the province with the aim of enhancement and improvement of the current economic state of the area. The proposed site Portion 6253 of Erf 1 has an extent of 47ha, and has been identified by the Department as a suitable site of sufficient extent with the potential for the development of a Metals Industrial Cluster, planned as an industrial park anchored around the steel and metals manufacturing sectors (refer

to **Figure 1.1** below). The property is owned by the Ga-Segonyana Local Municipality and upliftment and growth of the local economy is considered as a key focus area for the Municipality.

The identified site is located approximately 2km south east of the town of Kuruman in the Northern Cape. Access to the site is possible via the national road (N14) which is located approximately 300m to the north of the site and an unnamed secondary road which connects to the N14 and is located along the western boundary of the site. Another potential access route to the site in the general Kuruman area is the regional road (R31), which is located approximately 1.7km to the west of the site. Both the N14 and R31 provide direct access to the town of Kuruman.

For the development to be successful and thrive, not only as an industrial cluster but as a successful business venture, sufficient space is required for the development to be constructed on and operated. The development footprint of the Cluster will occupy the full extent of the property, that is an area of 47ha, resulting in the entire affected property being developed.

The Cluster will consist predominantly of Small, Medium and Micro-sized Enterprises (SMME) and Small and Medium Enterprises (SME) companies with an increasing number of larger firms over time. These enterprises could possibly be of a light, medium or heavy industrial nature.

The Cluster will be driven by a Cluster Management Company (CMC). Incentives will be offered to Cluster Member Firms (CMFs) and will include shared infrastructure, facilities and services, as well as access to funding. Shared infrastructure will include a common boundary fence, a security checkpoint, and utility connection points and roads infrastructure within the Cluster.

The Metals Industrial Cluster and associated infrastructure can be appropriately designed and sited within Portion 6253 of Erf 1 taking environmental, social and any other identified constraints into consideration.

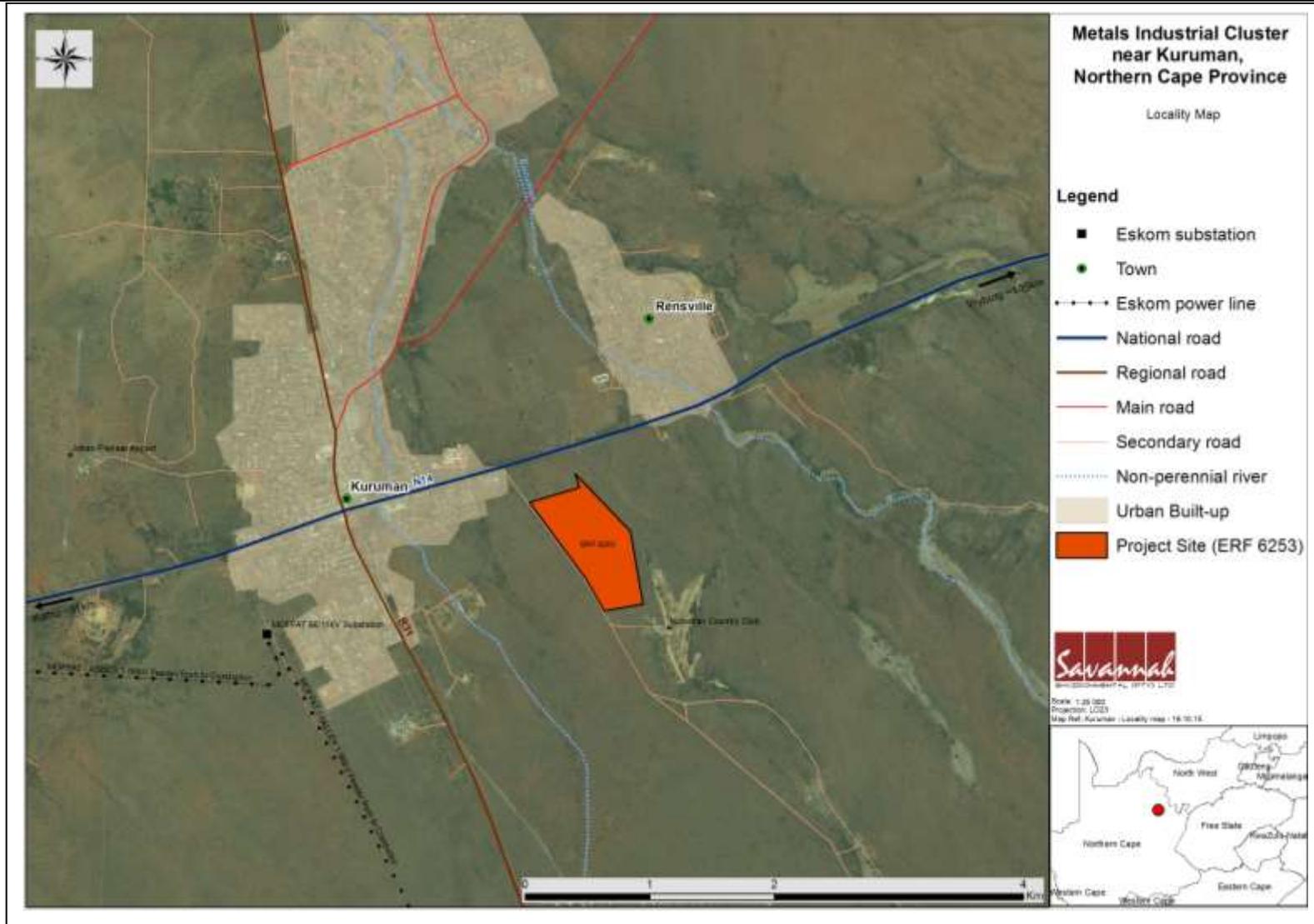


Figure 1.1: Locality map illustrating the location of the project site on Portion 6253 of Erf 1, approx. 2km south east of Kuruman.

Table 1.1: A detailed description of Portion 6253 of Erf 1 proposed for the development of the Metals Industrial Cluster

Province	Northern Cape Province
District Municipality	John Taolo Gaetsewe District Municipality
Local Municipality	Ga-Segonyana Local Municipality
Ward number(s)	1
Nearest town(s)	Kuruman, Rensville, Bodulong and Mothibistad
Farm name(s) and number(s)	Portion 6253 of Erf 1
Portion number(s)	-
SG 21 Digit Code (s)	C04100030000625300000
Current zoning	Undetermined Zone
Other	The site is located within the urban edge of the town of Kuruman.

The Cluster will include basic infrastructure that will be required for the operation of the development. The basic infrastructure to be constructed includes:

- » Buildings (warehousing, administrative buildings, skills development centre, student accommodation etc.);
- » Access roads including main access to the Cluster and internal access roads;
- » Landscaping;
- » Parking;
- » Fencing;
- » Infrastructure relating to bulk services including electricity, water, sewage and waste water; and
- » Security.

Any entity or company (CMF) planning to be located within the Metals Industrial Cluster will be required to make provision for the specific infrastructure that would be required for the operation of that specific entity, and the undertaking of its own permits and authorisations in terms of the legal requirements would be required.

The overarching objective of the Metals Industrial Cluster is to diversify economic activities and encourage development in the Northern Cape Province while maximising metals-related production through the development of a cluster with competitive but complimentary industries. In order to meet these objectives, local level environmental and planning issues will be assessed through the EIA with the aid of site-specific specialist studies in order to delineate areas of sensitivity within the site; this will serve to inform and optimise the layout of the cluster development.

1.4. Details of the Environmental Assessment Practitioner and Expertise to conduct the Scoping and EIA Phases

Savannah Environmental was contracted by the Northern Cape Department of Economic Development and Tourism as the independent consultant to undertake the Scoping and EIA process for the proposed Metals Industrial Cluster near Kuruman. Neither Savannah Environmental nor any of its sub-contracted specialist consultants for this project are subsidiaries of or are affiliated to the Northern Cape Department of Economic Development and Tourism. Furthermore, Savannah Environmental does not have any interests in secondary developments that may arise out of the authorisation of the proposed development.

Savannah Environmental is a specialist environmental consulting company providing holistic environmental management services, including environmental impact assessments and planning to ensure compliance and evaluate the risk of development; and the development and implementation of environmental management tools. Savannah Environmental benefits from the pooled resources, diverse skills and experience in the environmental field held by its team.

The Savannah Environmental team has considerable experience in environmental impact assessments and environmental management, and have been actively involved in undertaking environmental studies, for a wide variety of projects throughout South Africa. The following have contributed to the scoping evaluation and the drafting of this scoping report:

- » *Lisa Opperman* - the principle author of this report holds a Bachelor degree with Honours in Environmental Management and has one year of experience in the environmental field. Her key focus is on environmental impact assessments, public participation, environmental management plans and programmes, as well as mapping using ArcGIS for a variety of environmental projects. She is currently involved in several EIAs across the country.
- » *Karen Jodas* - is a registered Professional Natural Scientist and holds a Master of Science degree and is the registered EAP for this project. She has 20 years of experience consulting in the environmental field. Her key focus is on strategic environmental assessment and advice; management and co-ordination of environmental projects, which includes integration of environmental studies and environmental processes into larger engineering-based projects and ensuring compliance to legislation and guidelines; compliance reporting; the identification of environmental management solutions and mitigation/risk minimising measures; and strategy and guideline development. She is currently responsible for the project management of EIAs for several projects across the country.

- » *Gabriele Wood* - has eight years of consulting experience in public participation and social research. Her experience includes the design and implementation of public participation programmes and stakeholder management strategies for numerous integrated development planning and infrastructure projects. Her work focuses on managing the public participation component of Environmental Impact Assessments and Basic Assessments undertaken by Savannah Environmental.
- » *Gerhard Botha* – is an ecologist and environmental consultant with 5 years of experience. He specialises in ecological studies including flora, wetland and fauna studies. Specific responsibilities include, inter alia, professional execution of specialist consulting services (including flora, wetland and fauna studies), impact assessment reporting, walk through surveys/ground-truthing to inform final design, compilation of management plans, and compliance monitoring and audit reporting.
- » *Candice Hunter* – is a social specialist with a Master’s degree in Environmental Management and an advanced certificate in Social Impact Assessments (SIA). She has over 2 years of experience as a social consultant. Specific experience lies in field social research; the management and analysis of socio-economic baseline data; policy and programme analysis, undertaking stakeholder engagement; and conducting general social research for a variety of projects. Her expertise lie in the field of social impact assessments specifically within the Northern Cape, with significant experience in social consulting and report writing.

In order to adequately identify and assess potential environmental impacts associated with the proposed facility, Savannah Environmental has included the following sub-contracted specialist consultants to conduct specialist assessments:

- » Archaeology - Jaco van der Walt (Heritage Contracts and Archaeological Consulting CC (HCAC))

Appendix A includes the curricula vitae for the environmental assessment practitioners from Savannah Environmental as well as the specialist sub-consultant.

DESCRIPTION OF THE PROPOSED PROJECT

CHAPTER 2

This chapter provides an overview of the planned Metals Industrial Cluster and details the project scope which includes the planning/design, site establishment, operation and decommissioning activities. This chapter also explores the need and desirability of the project at the preferred site location, site alternatives as well as the 'do nothing' option. Lastly, it explores the operation of the Cluster as a means of economic growth and development in the Northern Cape.

2.1 Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required in terms of Appendix 2: Content of the Scoping Report:

Requirement	Relevant Section
(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	Legislation, policies, plans, guidelines, municipal development planning frameworks and instruments associated and considered with the development of the Minerals Industrial Cluster are included within section 2.2.1 and Table 3.4 and section 3.6 of Chapter 3 of this report.
(f) a motivation for the need and desirability for the proposed development including the need and desirability of the activity in the context of the preferred location	The need and desirability for the development of the Minerals Industrial Cluster within Portion 6253 of Erf 1 is included within section 2.2.
(h)(i) details of all the alternatives considered	The details of all alternatives considered are included within section 2.5.
(h)(ix) the outcome of the site selection matrix	A site selection process was followed by the Northern Cape Department of Economic Development and Tourism to identify the preferred site for the development. The outcome of the site selection process is supported by the assessment of the receptiveness of the study area for the development of a Metals Industrial Cluster. This outcome is included within section 2.5.1.
(h)(x) if no alternatives, including alternative locations for the activity were investigated, the motivation for not considering such	All information regarding alternatives considered or not considered is included within section 2.5.

2.2 The Need and Desirability of the Development at the Preferred Site Location and on a Local and National Level

The Northern Cape Province is a vast and arid Province and is by far the largest Province in South Africa, taking up nearly a third of South Africa's land area, however the Province has the smallest population, which is 2.2% of South Africa's population. The capital of the Northern Cape is Kimberley, located on the province's eastern border. Other important towns are Kuruman, Springbok and De Aar.

The Northern Cape has historically experienced a high volume of mining activity without the corresponding rise in manufacturing and the associated long-term economic and social benefits. Unemployment is prevalent in the Province and the Ga-Segonyana Local Municipality specifically has a high unemployment rate of 33.7%. This is considered as a serious social issue that needs to be addressed for advancement and growth to take place within the Province and Municipality. As a result of the current economic and employment state there is a need to create employment and business opportunities beyond the economically viable life of the mines and the agricultural sector characteristic of the Province. The establishment of a Metals Industrial Cluster is considered a viable and desirable opportunity to see the realisation of the identified long-term economic and social benefits.

The site identified by the Northern Cape Department of Economic Development and Tourism is considered as a desirable and feasible site for the development of the Cluster, not only from an economic perspective but also an environmental and social perspective. The use of the identified site for heavy to low industrial and business purposes are in line with the following national, provincial and local policies which provide the core rationale for the need and justification for the development. These policies include i) the National Development Plan 2030, ii) the Northern Cape Provincial Development and Resource Management Plan/Provincial Spatial Development Framework (PSDF) (2012), iii) the Northern Cape Provincial Growth and Development Strategy (PGDS) (2011), iv) the Northern Cape Provincial Local Economic Development (LED) Strategy (2009), v) the John Taolo Gaetsewe District Municipality Integrated Development Plan (IDP) (2012-2019) and vi) the Ga-Segonyana Local Municipality Integrated Development Plan (IDP) (2015-2016). The proposed development will contribute towards targets and policy aims stated within the abovementioned policies.

The Northern Cape Provincial Spatial Development Framework (PSDF) identifies specific corridors within the Province that are considered as suitable and appropriate for the development of certain industries, specifically referring to that

of the mining and industrial sector. The proposed site is located within the Spatial Plan Category (SPC) E of the SPDF and is classified as an industrial area (refer to **Figure 2.1** below).

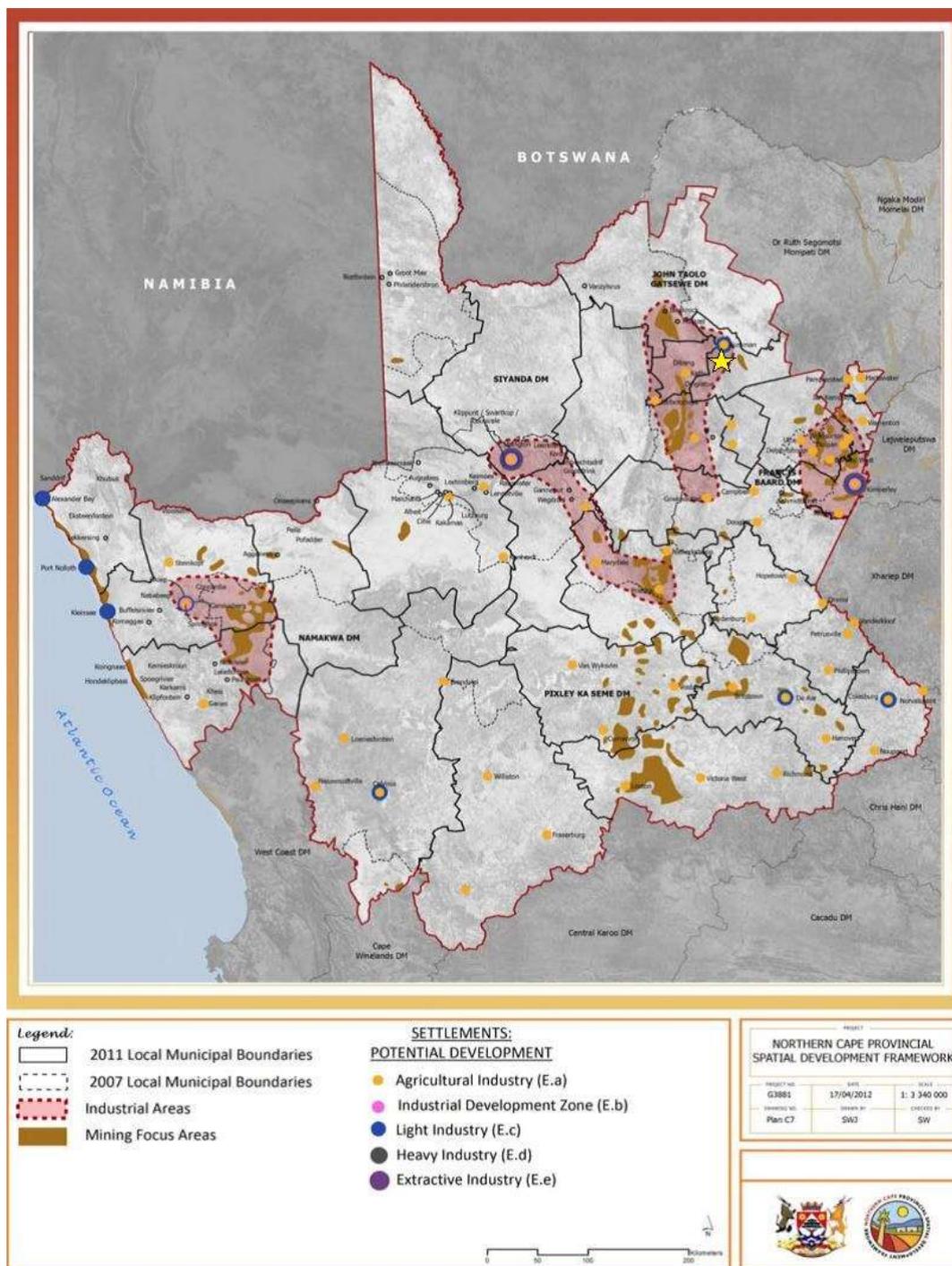


Figure 2.1: Spatial Plan for SPC E: Industrial Areas (Source: Northern Cape PSDF 2012). The site proposed for the development of the Metals Industrial Cluster is shown by the yellow star.

There are other features located in the proximity to the proposed site which contribute to the desirability and suitability of the proposed location for the development of the Cluster.

- a. Accessibility to the site.
- b. Proximity to the town and availability and accessibility to bulk services.
- c. Social considerations.
- d. Other industrial developments within the surrounding areas of the site.

In general, the development of industrial clusters contribute to the needs of economic growth and development by creating an environment which improves productivity, increases innovation, and provides a supportive atmosphere for start-ups and growing businesses. Industrial clusters are mechanisms for achieving growth in targeted industries, boosting economic activity, often in geographical areas that would not have attracted industrial development otherwise. The Metals Industrial Cluster will also focus on transferable skills development and training and promoting the education of the local residents in the area, while diversifying the economic sector. Therefore the establishment of the proposed Cluster on Portion 6253 of Erf 1 near the town of Kuruman is a suitable and appropriate development that will contribute to the area through a variety of mechanisms and aid in the advancement and growth of the economy and social sectors.

The proposed site is situated in an area that is earmarked for industrial development that has a need for economic growth and development (as identified by the economic and social needs of the Province and the Local and District municipalities), which will be realised by the establishment and operation of the Metals Industrial Cluster.

2.2.1 Strategic Context for Industrial Development: National, Provincial and Local Policy level

According to the DEA Guideline on Need and Desirability (October 2014) in terms of the Environmental Impact Assessment (EIA) Regulations 2010, and in the requirements outlined in Appendix 2 of the EIA Regulations 2014, a motivation for the need and desirability of a development must be measured against the contents of the Integrated Development Plan (IDP), Spatial Development Framework (SDF) and Environmental Management Framework (EMF) for an area, and the sustainable development vision, goals and objectives formulated in, and the desired spatial form and pattern of land use reflected in the area's IDP and SDF. This section of the report provides a summary of the findings from the review of relevant policies and guidelines at a national, provincial and local scale regarding the need for industrial development and the Metals Industrial Cluster.

2.2.1.1 The National Development Plan 2030

The National Development Plan aims to eliminate poverty and reduce inequality by 2030. Given the complexity of national development, the plan sets out a number of interlinked priorities, some of which include:

- » Bringing about faster economic growth, higher investment and greater labour absorption.
- » Focusing on key capabilities of people and the state.
- » Building a capable and developmental state.

Enabling milestones include:

- » Increase in employment opportunities from 13 million in 2010 to 24 million in 2030.
- » Establish a competitive base of infrastructure, human resources and regulatory frameworks.
- » Ensure that skilled, technical, professional and managerial posts better reflect the country's racial gender and disability makeup.
- » Increase the quality of education.
- » Provide affordable access to quality health care.
- » Establish effective, safe and affordable public transport.
- » Produce sufficient energy to support industry at competitive prices, ensuring access for poor households, while reducing carbon emissions per unit of power by about one-third.
- » Ensure that all South Africans have access to clean running water in their homes.
- » Make high-speed broadband internet universally available at competitive prices.
- » Realise a food trade surplus, with one-third produced by small-scale farmers or households.

The National Development Plan aims to provide a supportive environment for growth and development, while promoting a more labour-absorbing economy. The proposed development will assist in creating jobs and stimulating the local economy while promoting growth.

2.2.1.2. Northern Cape Provincial Development and Resource Management Plan/Provincial Spatial Development Framework (PSDF) (2012)

As part of the development planning process that underlies the formulation of the Northern Cape Provincial Spatial Development Framework (PSDF). The PSDF not only gives effect to national spatial development priorities but it also sets out a series of provincial, district and local development priorities for the space economy of the Northern Cape.

The Northern Cape PSDF is premised upon and gives effect to the following five strategic objectives of the National Strategy for Sustainable Development (NSSD 2011-2014):

- » Enhancing systems for integrated planning and implementation
- » Sustaining our ecosystems and using natural resources efficiently
- » Towards green economy
- » Building sustainable communities
- » Responding effectively to climate change

The Northern Cape PSDF also discusses economic development and that it typically responds to the availability of environmental capital (e.g. water, suitable agricultural soil, mining resources etc.) and infrastructural capital (e.g. roads, electricity, bulk engineering services etc.); over time this has resulted in the distinct development regions and corridors. The proposed development area falls within the Spatial Plan Category (SPC) E - industrial area (refer to **Figure 2.1**). A key challenge of the Northern Cape is to broaden and unlock the opportunities presented by the availability of natural resources. Industrial activities, whether large- or small-scale, have the potential to stimulate economic diversification and development in the province.

2.2.1.3 Northern Cape Provincial Growth and Development Strategy (PGDS) (2011)

The Northern Cape Provincial Growth and Development Strategy (PGDS) sets the tone for development planning and outlines the strategic planning direction in the province. Planning for the promotion of economic growth and social development lies at the core of the Government's responsibility to provide a better life for the nation. It is essential to ensure that planning is integrated across disciplines, coordinated within and between different planning jurisdictions and aligned with the budgeting processes of national, provincial and local government. The core purpose of the Northern Cape PGDS is to enable stakeholders from public and private sectors, together with labour and civil society, to determine a plan for sustainable growth and development of the Northern Cape. The main objectives set by the Northern Cape PGDS for development planning in the province are as follows:

- » Promoting growth, diversification and transformation of the provincial economy
- » Poverty reduction through social development
- » Developing requisite levels of human and social capital
- » Improving the efficiency and effectiveness of governance and other development institutions
- » Enhancing infrastructure for economic growth and social development

The Northern Cape PGDS aims at building a prosperous, sustainable, growing provincial economy to eradicate poverty and improve social development. The proposed development will contribute to growth and development of the province by expanding the economic base, diversifying the economy and creating employment opportunities, which will contribute towards reducing poverty.

2.2.1.4 Northern Cape Provincial Local Economic Development (LED) Strategy (2009)

The Northern Cape Local Economic Development (LED) strategy is intended to build a shared understanding of LED in the province and put into context the role of local economies in the provincial economy. It seeks to mobilise local people and local resources in an effort to fight poverty. The Northern Cape LED strategy investigated the options and opportunities available to broaden the local economic base of the province in order to promote the creation of employment opportunities and the resultant spin-off effects throughout the local economy. Areas of opportunity include:

- » Livestock products
- » Game farming
- » Horticulture
- » Agriculture
- » Ago-related industries
- » Tourism
- » Manganese and iron Ore
- » Beneficiation of minerals
- » Renewable energy

The purpose of the LED is to build up the economic capacity of a local area to improve its economic future and quality of life for all. The LED provides local municipalities with leadership and direction in policy making, in order to administer policy, programmes and projects, and to be the main initiator of economic development programmes through public spending. The proposed development has the opportunity to broaden the local economic base and promote the creation of employment opportunities as well as local economy spin-off effects.

2.2.1.5 John Taolo Gaetsewe District Municipality Integrated Development Plan (IDP) (2012-2019)

Section 152 of the Constitution, 1996, stipulates as the core objects of local government are the following:

- » To provide democratic and accountable government for local communities;
- » To ensure the provision of services to communities in a sustainable manner;

- » To promote social and economic development;
- » To promote a safe and healthy environment; and
- » To encourage the involvement of communities and community organisations in the matters of local government.

The John Taolo Gaetsewe District Municipality (JTGDM) objectives/priorities are aligned to six Key Performance Areas (KPAs) for Local Government. The following have been identified as long-term strategic objectives of the JTGDM, based on its role as a district municipality:

KPA 1: Basic Services and Infrastructure:

- » To provide road and transport services
- » To provide bulk water and sanitation services
- » To provide adequate housing to the residents of the District
- » To develop community facilities
- » To promote employee wellness
- » To provide municipal health services to the communities of the District
- » To monitor the quality of water in the District
- » To provide food quality/safety control services
- » To monitor waste management systems refuse, health care waste, hazardous waste and sewage
- » To frequently survey Health Premises
- » To manage communicable disease outbreaks (excluding immunisations)
- » To monitor the prevalence of vectors
- » To control environmental pollution
- » To manage disposal of the dead
- » To promote awareness of health risk factors
- » To provide disaster management services

KPA 2: Local Economic Development (LED)

- » To promote local economic development
- » To facilitate optimal participation of partners in the Economic Growth Initiatives of the District
- » To facilitate the coordination of CRDP
- » To promote employment opportunities in the District
- » To facilitate increased LED capacity in the District
- » To enhance tourism development and promote the District as a preferred tourism destination
- » To facilitate availability of land for Economic Development

KPA 3: Good Governance & Public Participation

- » To review and report IDP implementation progress against predetermined objectives
- » To foster and promote good inter-governmental relations
- » To govern municipal affairs
- » To improve public participation
- » To ensure legal compliance

- » To manage risks to the Municipality
- » To promote ethical behaviour
- » To promote the interests and rights of targeted groups – women, children, youth, disabled, elderly
- » To promote moral regeneration in the District
- » To achieve a clean annual audit outcome
- » To promote good governance
- » To promote financial viability
- » To contribute to good intergovernmental relations
- » To promote risk management

KPA 4: Spatial Development and Integrated Development Planning

- » To implement the Spatial Planning and Land Use Management Act (SPLUMA)
- » To ensure effective strategic integrated sustainable development planning in the District

KPA 5: Institutional Transformation and Development

- » To provide integrated human resource service
- » To provide adequate opportunities for the development of employees and councillors
- » To provide equitable employment opportunities for all
- » To promote sound labour relations
- » To provide ICT services
- » To ensure that legislative and policy systems are in place
- » To provide effective administrative support services
- » To provide records management services
- » To provide auxiliary services

KPA 6: Financial Viability and Management

- » To enhance the financial viability of the municipality
- » To ensure that the Municipality is SCOA compliant
- » To ensure that the municipal assets are properly safeguarded

The IDP aims at promoting local economic growth and social development in order to provide a better life for the communities. The proposed development will provide employment opportunities and contribute in assisting the District Municipality in achieving local economic development.

2.2.1.6 Ga-Segonyana Local Municipality Integrated Development Plan (IDP) (2015-2016)

The current vision of the Ga-Segonyana Local Municipality (GSLM) is “*An integrated Municipality that is committed to the creation of a better life through sustainable development for the people of Ga-Segonyana*”. The Municipality strives to epitomize this at all times by endeavouring to:

- » Involve its communities in the affairs of decision-making about basic service delivery, local economic development and the manner in which the municipality is managed;
- » Emphasise care and human dignity in its interaction with its communities; and
- » Constantly attempts to improve the efficiency, effectiveness and economy of its administration and the activities in which it engaged itself in order to render services.

Section 152 of the Constitution, 1996, stipulates the core objects of local government as the following:

- » To provide democratic and accountable government for local communities;
- » To ensure the provision of services to communities in a sustainable manner;
- » To promote social and economic development;
- » To promote a safe and healthy environment; and
- » To encourage the involvement of communities and community organisations in the matters of local government.

The Ga-Segonyana Municipality places these objects at the core of all its operations, programmes and projects, and has therefore, in compliance with the National Government’s vision for local government, structured its activities according to the following five key performance areas (**Table 2.1**):

Table 2.1: The key performance areas of the Ga-Segonyana Local Municipality

Objectives of the Constitution, 1996	Municipal Key Performance Areas
To provide democratic and accountable government for local communities	Good Governance and Public Participation
To encourage the involvement of communities and community organisations in the matters of local government	
To ensure the provision of services to communities in a sustainable manner	
To ensure the provision of services to communities in a sustainable manner	Basic Service Delivery & Infrastructure Investment
To promote a safe and healthy environment	
To promote social and economic development	Local Economic Development (including job creation)

The GSLM’s focus is on economic and social development and service delivery. The proposed development will contribute to economic and social development through employment opportunities and business opportunities in the local area which will contribute towards reducing the poverty levels in the GSLM.

2.3 Rationale and benefits of the proposed development

There is a strong case behind the reasoning for the establishment of the Metals Industrial Cluster within the town of Kuruman with the aim of job creation, acquisition and growth of skills and knowledge, expansion of opportunities and localisation of “hard” technologies.

There are strong arguments for the development of the Cluster in relation to the metals manufacturing industries:

- » There is a strong demand throughout the Northern Cape for metal manufactures products. This demand is currently met primarily through imports, together with small and basic local fabricators.
- » The need for development of artisans, technicians and engineers will be achieved by the Cluster through various development programs, particularly on the job training, incubators, hybrid work-sharing and skills development.
- » The Cluster, including the Cluster Member Firms, will create a broader base to compete in the overall industrial market and to grow more rapidly in terms of development. Each member firm will have distinctive complementary capabilities that will create competitive advantages and scale of economies when harnessed jointly.

At the highest level the Cluster will help address a number of issues which are related to social and economic challenges experienced by people in Kuruman, the John Taolo Gaetsewe District Municipality and the Northern Cape Province.

Table 2.2 below indicates the local and regional needs of the area within which the site for the proposed Metals Industrial Cluster is located and the contribution that the development of the Cluster will have.

Table 2.2: A description of the needs in the local and regional areas surrounding the site and the manner in which the Cluster will contribute.

Need	Contribution
An increase in the size of the manufacturing industry.	The Cluster in itself is a manufacturing centre and the demand generated by the Cluster will boost demand in other local areas.
An increase in employment and income levels.	The Cluster will result in a significant amount of direct and indirect jobs, as well as an increase in skilled and semi-skilled employment.
The local industry must be able to support strategic initiatives such as the Strategic Infrastructure Projects (SIPs)	The Cluster will create a local industry presence that will enable supply options for relevant SIP initiatives
Locally produce more of the goods	The Cluster will increase the number of local

consumed in the Northern Cape.	supply options for goods consumed in the Northern Cape as a result of the influx people that will be attracted to the area by the Cluster and through the increased economic activity which will stem from the Cluster activity.
The improvement of conditions for business development.	The Cluster will provide extensive skills-building and business support opportunities to Cluster Member Firms and associated businesses.

The following socio-economic values and benefits are expected to be associated with the development of the Metals Industrial Cluster:

- » Infrastructure relating to bulk services including electricity, water, sewage and waste water; and
- » The anticipated capital expenditure value of the project on completion is expected to be approximately R800 million.
- » The annual income to be generated by the proposed Metals Industrial Cluster is expected to be approximately R300 million.
- » New skilled employment opportunities expected to be created in the construction phase of the development is approximately ~2600.
- » New skilled employment opportunities expected to be created in the operational phase is approximately ~2000.
- » New unskilled employment opportunities expected to be created in the construction phase is approximately ~1760.
- » New unskilled employment opportunities expected to be created in the operation phase is approximately ~5000.
- » The expected value to be generated in terms of the employment opportunities during the operation and construction phase is R20.2 billion.
- » The percentage of the value to be generated in terms of the employment opportunities that will accrue to previously disadvantaged individuals is expected to be approximately 40%.
- » The expected current value of the employment opportunities during the first 10 years is approximately R4.04 billion.
- » The percentage of the value to be generated in terms of employment opportunities during the first 10 years that will accrue to previously disadvantaged individuals is approximately 40%.

2.4 Receptiveness of the site to the development of the Metals Industrial Cluster

The Northern Cape Department of Economic Development and Tourism considers the site, Portion 6253 of Erf 1, to be highly preferred for the development of an industrial cluster. The reasons include:

- » Extent of site: The extent of Portion 6253 of Erf 1 is 47ha in size. The development footprint of the Cluster would occupy the full extent of the property, and would therefore exceed 40ha in extent, allowing for a sizable industrial cluster to be established.
- » Availability of land: The development of the Metals Industrial Cluster requires sufficient space to be constructed and operated on. The landowner of Portion 6253 of Erf 1, the Ga-Segonyana Local Municipality, is willing to allow the development of the Metals Industrial Cluster to take place on its property and will allow the Department to establish the development for 20 years or more.
- » Electricity supply considerations: Electricity will be supplied by the Ga-Segonyana Local Municipality, in consultation with Eskom, to the Cluster for establishment and operation related activities.
- » Site access: Direct access to the site is possible through the use of the national road, N14, which is located approximately 300m to the north of the site. Alternatively, access is possible through the use of a surfaced secondary road that connects to the N14 and follows the western boundary of the site.
- » Current land use: No development has taken place on the land. Informal and uncontrolled grazing activities are currently noted within the site. There is considered to be sufficient space in the surrounding properties for grazing to continue during the operation of the Cluster.
- » Landscape features: The landscape can be summarised as flat rocky plains containing some sloping hills with a very well-developed, closed shrub layer and a well-developed open tree stratum consisting predominantly of *Acacia erioloba*. Most of the landscape can be classified as Class A2 (as per the land type classification data) with more than 80% of the area containing a slope of less than 8%.
- » Geographic location: The site falls within a corridor identified as a geographical area/focus area most suitable for the rollout of the construction and operation of industrial developments as per the Northern Cape Provincial Spatial Development Framework. The area surrounding the site (i.e. the town of Kuruman) is in need of economic development and growth and the construction and operation of the Cluster will aid in achieving these needs.

The above criteria are discussed in more detail below.

Topography and landscape features

Most of the landscape located to the south and south east is characterised by flat featureless plains of the Ghaap Plateau. The plateau gradually declines northwards to reach the non-perennial Kuruman River. From the Kuruman River the topographic gradient decreases to reach the Molopo River. The non-perennial rivers Matlharing and Moshaweng join the Kuruman River from the east. No perennial rivers exist within the area.

The region within which the study area is located can be described as flat rocky plains with more than 80% of the area associated with a slope of less than 8% and a relief of 30m to 90m. The gentle slope of the area is beneficial for the development of the Metals Industrial Cluster as extensive levelling of the site or erosion control measures will not be required and accessibility to the site in terms of transportation of goods and people will be of minimal effort.

Proximity to Towns with a Need for Socio-Economic Upliftment

The main towns located in the Ga-Segonyana Local Municipality include Bankhara-Bodulong, Kuruman and Mothibistad. The municipality has a high unemployment rate of 33.7%. Upliftment and growth of the local economy is therefore considered as a key focus area for the municipality. The greatest social problems within the local municipality are illiteracy, poverty and lack of basic service infrastructure. The income distribution is distorted in the area to the disadvantage of the less economically secured people, who also represents the majority of the municipal area. Poor households are a result of a lack of wage income, either due to unemployment or low-paying jobs. Access to basic services such as electricity, toilets and piped water is also closely correlated with poverty.

There is a strong need for upliftment and growth within the Ga-Segonyana Local Municipality from a social and economic perspective. The development of the Metals Industrial Cluster will aid in the relief of unemployment and other social and economic issues. Economic benefits associated with the development includes economic growth and development such as economic opportunities including employment and expenditure in the local area.

Proximity to Access Road for Transportation of Material and Components

Sufficient access is available in the surrounding areas and in close proximity to the site for a development of this nature (i.e. a development which is heavily dependent on the transportation of goods). The national road, N14, is located approximately 300m to the north of the site. This national road is extensive and links to other national roads, including the N18, N1, N12, N10 and the N7, across the country. The N14 traverses the country in an east-west direction and is the connection between the towns Springbok, Aggeneys, Pofadder, Kakamas, Keimoes, Upington, Olifantshoek, Kathu, Kuruman, Vryburg, Delareyville, Sannieshof, Coligny, Ventersdorp, Krugersdorp and Johannesburg. Another potential access route to the site is the regional road (R31), which is located approximately 1.7km to the west of the site. Both the N14 and R31 traverse the town of Kuruman. Direct access to the site is possible through the use of an unnamed secondary road which connects to the N14 and is parallel to the western boundary of the site.

2.5 Alternatives Considered in the Scoping Phase

In accordance with the requirements outlined in Appendix 2 of the EIA Regulations 2014, the consideration of alternatives including site and technology alternatives and the "do-nothing" alternative should be undertaken. The following sections address this requirement.

2.5.1 Site Alternatives

A site selection process was undertaken by the Northern Cape Department of Economic Development and Tourism, with the assistance of the Ga-Segonyana Local Municipality, to locate and identify potential sites for the development of the Cluster. The site selection process also included a study in terms of the feasibility of the development in the kuruman area and the identified site (Redflank Solutions, 2015). Throughout the undertaking of this site selection process the Department considered the following characteristics in terms of the most appropriate and feasible location for the development of the Metals Industrial Cluster.

- » Accessibility to the area where the development would take place was taken into consideration and was deemed as the most important consideration for the location as the Metals Industrial Cluster will be highly dependent on the transportation of goods to and from the site.
- » Social considerations, including health considerations and the need for the development on a social level, were taken into account regarding the location of the development.
- » The availability and accessibility of bulk services which will be required for the construction and operation of the Cluster.
- » The proximity to areas which have also been developed for industrial use.

After consideration of the above characteristics the preferred site was identified.

The site adheres to the characteristics considered in the site selection process in the following ways:

- » Accessibility to the site is possible via the N14. This national route connects to various other national routes within the country allowing for widespread accessibility. Access to the site is also possible via the regional road (R31), which is located approximately 1.7km to the west of the site. A surfaced, unnamed secondary road located along the western boundary of the site which connects to the N14 located to the north can be used for direct access to the site.

- » The prevailing wind direction for the town of Kuruman (southerly prevailing wind direction) was taken into account. The prevailing wind direction will blow any potential emissions related to the cluster away from the town of Kuruman and the over the site to the south.
- » The CBD (Central Business District) of the town of Kuruman is located approximately 2km north east of the site. The location of the site is situated within the urban edge of the town of Kuruman and is located in close proximity to built-up areas surrounding the CBD which provides the opportunity for the development of the Metals Industrial Cluster to become involved in the existing bulk services of the town promoting further growth and development.
- » The location of the proposed site is situated approximately 2.2km east of the existing Kuruman Industrial area, creating a node for industrial activities, which reinforces the location of the site for the Metals Industrial Cluster.

The location of the site falls within the urban edge, and in close proximity to already-established facilities and industrial areas, this has led to the development of the Cluster across the full extent of Portion 6253 of Erf 1 being considered as in-fill development. The site is owned by the Ga-Segonyana Local Municipality, and as such is earmarked for development in the short-term. As the site proposed for the development is an appropriate and viable location to house the Metals Industrial Cluster, no site alternative locations are being considered for the development.

2.5.2 Layout and Design Alternatives

The entities or companies (CMFs) who will be locating within the Cluster are not known at this stage of the development process, and will only be identified at a later stage once the Cluster is approved and establishment can commence. Therefore, it is not possible at this stage of the process to provide a detailed layout or design of the Cluster. A more broad-brush approach will be undertaken to determine development zones within the boundary of the Cluster. The layout of the Metals Industrial Cluster will consider the placement of light, medium or heavy industrial operations within the site by allocating zones or sections for specific types of industrial developments (i.e. light, medium or heavy zones) within the site taking into consideration the impact that a light, medium or heavy industry will have if it is placed within a specific area.

Technology Alternatives

Technology alternatives are not applicable to the *establishment* of the Metals Industrial Cluster. The specific technologies that will ultimately be considered for implementation within the Metals Industrial Cluster are not explicitly defined or known at this stage of the development process, and will only be identified at a later stage once the Cluster is approved and establishment can commence.

Each entity or company (CMFs) to be constructed and operated within the Cluster will have specific technology requirements for the operation activities. Each development will be required to be assessed further once known, should such an activity be required to be authorised or permitted/licensed. As the specific entities or companies who will be locating within the Cluster have not been identified at this stage, technology alternatives will not be assessed within this EIA process.

Access Road(s) Alternatives

Access to the site is possible through the use of the national road (N14) or a surfaced secondary unnamed road that is located along the western boundary of the site that connects to the N14.

The final design for the access roads (internal and external) will be considered in the EIA phase, specific transportation requirements will have to be met for specific entities in terms of the size of the access roads in order to fulfil the transportation needs.

2.5.3 The 'Do-Nothing' Alternative

The 'do-nothing' alternative is the option of not establishing the proposed Metals Industrial Cluster. Should this alternative be selected then the benefits of this project will not be realised. Should this alternative be selected, there would be no environmental impacts on the site due to the establishment and operation activities of the Cluster not occurring. However, the benefits of the development, including job creation, local procurement, economic growth and skills development and training within an area where unemployment is considered as one of the major issues will not be realised. This alternative will be assessed in detail within the EIA Phase of the process.

2.6 Description of the Associated Infrastructure

The Cluster is proposed to include basic infrastructure which will be accessible and utilised by all Cluster Member Firms (CMFs) locating within the development. The basic infrastructure to be constructed includes the following:

- » Buildings (warehousing, administrative buildings, skills development centre, student accommodation etc.);
- » Access roads including main access to the Cluster and internal access roads;
- » Landscaping;
- » Parking and administrative buildings;
- » Fencing;
- » Infrastructure relating to bulk services including electricity, water, sewage and waste water; and

- » Security.

It should be noted that the entities or companies that will be locating within the Cluster have yet to be identified. Any entity or company (CMF) planning to locate within the Metals Industrial Cluster will have to make provision for the specific infrastructure that would be required for the operation of the specific entity.

2.7 Proposed Activities during the Project Development Stages

In order to establish the Cluster and its associated basic infrastructure, a series of activities will need to be undertaken during the design, establishment, operation, and decommissioning phases which are discussed in more detail below.

2.7.1 Design and Pre-Construction Phase

Conduct Surveys

Prior to initiating construction, a number of surveys will be required including, but not limited to:

- » Geotechnical survey - the geology and topography of the development footprint will be surveyed. The geotechnical study will focus on topographical constraints, foundation conditions, potential for excavations, and the availability of natural construction materials. The geotechnical examination will include surface and subsurface exploration, soil sampling and laboratory analysis.
- » Site survey - will be done for the finalisation of the general layout of the Cluster. The footprint of the Cluster, including the zones or sections identified for the development of a specific type of industry (i.e. light, medium or heavy zones), will consider any environmental sensitivity identified during the EIA Phase investigations and will need to be confirmed in line with the Environmental Authorisation issued for the development.

2.7.2 Site Establishment / Construction Phase

Establishment of the proposed Metals Industrial Cluster is expected to include the following activities:

- » Access roads will be established to the site.
- » Site preparation activities for the establishment of basic infrastructure will include clearance of vegetation and excavations for foundations. These activities will require the stripping of topsoil.
- » Civil works will take place which will involve concrete works for structures such as foundations and roads.
- » Mechanical and electrical installation works will be established.

- » Ancillary infrastructure such as security and warehousing will be established.
- » As construction activities are completed in an area, and as all construction equipment is removed from the site, the site will be rehabilitated where practical and reasonable.

2.7.3 Operation Phase

The proposed Cluster is expected to operate for a minimum of 20 years (which includes the transformation of the Cluster through the first three phases). Phase 4 is intended to cater for the expansion of the Cluster beyond the 20-year timeframe planned for the first three phases. It is anticipated that there will be full time security, maintenance and control room staff required at the site.

2.7.4 Decommissioning Phase

The lifespan of the proposed Cluster is expected to be more than 20 years. Equipment associated with the Cluster would only be decommissioned once it has reached the end of its economic life or if it is no longer required. It is most likely that decommissioning activities of the infrastructure of the Cluster would comprise the disassembly and disposal of the infrastructure. Decommissioning activities will involve disassembly of the production units and ancillary infrastructure, demolishing of buildings, removal of waste from the site and rehabilitation to the desired end-use.

APPROACH TO UNDERTAKING THE SCOPING PHASE **CHAPTER 3**

An Environmental Impact Assessment (EIA) process refers to that process undertaken in line with the EIA Regulations of 2014 which involves the identification and assessment of direct, indirect, and cumulative environmental impacts associated with a proposed project or activity. The EIA process comprises two main phases: i.e. **Scoping Phase** and **EIA Phase**. The EIA process culminates in the submission of an EIA Report (including an Environmental Management Programme (EMPr)) to the competent authority for decision-making. The EIA process is illustrated below:



Figure 3.1: The Phases of an Environmental Impact Assessment (EIA) Process.

The Northern Cape Department of Economic Development and Tourism propose the establishment of a Metals Industrial Cluster as well as associated infrastructure on Portion 6253 of Erf 1 situated approximately 2km south east from the town of Kuruman in the Northern Cape Province. The Scoping Phase for the proposed development is being undertaken in accordance with section 24(5) of the National Environmental Management Act (No 107 of 1998). In terms of the EIA Regulations (2014) of GN R982, GN R983, GN R984 and GN R985, a Scoping and EIA study is required to be undertaken for the proposed development. In accordance with these Regulations, this Scoping process aims at identifying potential environmental and social issues associated with the establishment of the Metals Industrial Cluster on the 47ha site, and defining the extent of studies required within the EIA phase. This was achieved through an evaluation of the proposed development involving desk-top specialist studies, as well as a consultation process with the Interested and Affected Parties (I&APs), including the decision making authority, directly impacted landowners/occupiers, adjacent landowners/occupiers, relevant Organ of State departments, ward councillors and other key stakeholders. This chapter serves to outline the process which was followed during the Scoping Phase of the EIA process.

3.1. Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required in terms of Appendix 2: Content of the Scoping Report of the EIA Regulations, 2014:

Requirement	Relevant Section
(d) a description of the scope of the proposed activity, including (i) all listed and specified activities triggered and (ii) a description of the activities to be undertaken, including associated structures and infrastructure	All listed activities as per the EIA Regulations (2014), GN R983, GN R984 and GN R985, that are triggered through the establishment of the Metals Industrial Cluster and a description of the activities to be undertaken are included in Table 3.1 within section 3.2.
(e) a description of the policy and legislative context within which the development is proposed including an identification of all legislation, policies, plans, guidelines, spatial tools, municipal development planning frameworks and instruments that are applicable to this activity and are to be considered in the assessment process	Legislation, policies, plans, guidelines, municipal development planning frameworks and instruments associated and considered for the development of the Metals Industrial Cluster is included within Table 3.4 and section 3.6 and section 2.2.1 of Chapter 2.
(h)(ii) details of the public participation process undertaken in terms of Regulation 41 of the Regulations, including copies of the supporting documents and inputs	The public participation process that has been undertaken (including the identification of stakeholders, the registration of interested and affected parties, the distribution of notifications and the publishing of an advertisement, consultation and involvement of the public and the identification and recording of issues and concerns) for the scoping phase of the Metals Industrial Cluster is detailed within section 3.4.2 and Appendix C.
(h)(iii) a summary of the issues raised by interested and affected parties, and an indication of the manner in which the issues were incorporated, or the reasons for not including them	Issues or concerns have been raised regarding the project. All issues and concerns raised by interested and affected parties to date have been included within the Comments and Responses Report of Appendix C.

3.2. Relevant Listed Activities

In terms of the EIA Regulations, 2014 (GN R983, GN R984 and GN R985), the following listed activities are triggered by the proposed Metals Industrial Cluster:

Table 3.1: Listed activities triggered by the proposed Metals Industrial Cluster

Number and date of the relevant notice:	Activity No (s) (in terms of the relevant notice):	Description of each listed activity as per project description
GN 983, 08 December 2014	28(i)	Residential, mixed, retail, commercial, industrial or institutional developments where such land was used for agriculture or afforestation on or after 01 April 1998 and where such development (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares. <i>The Metals Industrial Cluster is considered as an industrial development that will take place within an urban area with an extent of 47ha.</i>
GN 984, 08 December 2014	15	The clearance of an area of 20 hectares or more of indigenous vegetation. <i>The Metals Industrial Cluster will be 47ha in extent, and will require the clearance of an area exceeding 20ha in extent.</i>

The main reasons for the authorisation of the proposed Metals Industrial Cluster, as per the listed activities triggered above, is a change in the land-use of the site and the removal of vegetation within the site.

On the basis of the above listed activities, a Scoping and EIA Process is required to be undertaken for the proposed development¹. This process is to be undertaken in two phases as follows:

- » The **Scoping Phase** includes the identification of potential issues associated with the proposed development through a desktop study and consultation with I&APs through a public participation process. The entire property is considered within this process at a desk-top level. Through this study, areas

¹ An application for Environmental Authorisation has been submitted for the establishment of the Metals Industrial Cluster to the competent authority, Northern Cape Department of Environment and Nature Conservation (DENC).

of sensitivity within the broader site are identified and delineated in order to identify any environmental fatal flaws, and sensitive or no go areas. Following a 30-day review period of the Scoping report, this phase culminates in the submission of a Final Scoping Report and Plan of Study for EIA to the Northern Cape Department of Environment and Nature Conservation (DENC).

- » The **EIA Phase** involves a detailed assessment of potentially significant positive and negative impacts (direct, indirect, and cumulative) identified in the Scoping Phase. This phase includes detailed specialist investigations, including field-surveys, and a public participation process. The detailed studies consider the proposed development footprint, the placement of which is informed by the outcomes of the scoping study. Following a 30-day review period of the EIA report, this phase culminates in the submission of a Final EIA Report and an Environmental Management Programme (EMPr), including recommendations of practical and achievable mitigation and management measures, to the Northern Cape Department of Environment and Nature Conservation (DENC) for decision-making.

3.3. Objectives of the Scoping Phase

This Scoping report documents the evaluation of the potential environmental impacts of the proposed Metals Industrial Cluster and forms part of the EIA process. The Scoping Phase was conducted in accordance with the requirements of the EIA Regulations in terms of Section 24(5) of the National Environmental Management Act (NEMA; Act No 107 of 1998).

This Scoping Phase aims to:

- » Identify, describe and evaluate potential environmental (biophysical and social) impacts and benefits of all phases of the proposed development (including design, construction, operation and decommissioning) within the site through a desk-top review of existing baseline data and desk-top specialist studies.
- » Identify potentially sensitive environmental features and areas within the site in order to inform the preliminary design process of the development.
- » Define the scope of studies to be undertaken within the EIA process.
- » Provide the authorities with sufficient information in order to make a decision regarding the scope of issues to be addressed in the EIA process, as well as the scope and extent of specialist studies that will be required to be undertaken as part of the EIA Phase of the process.

The following objectives of the scoping process (in line with Appendix 2 of the EIA Regulations of 2014) have been met, through the undertaking of a consultative process and with the assistance of specialist input.

- » The identification of relevant policies and legislation regarding the activities to be undertaken have been identified and considered within this scoping report.
- » Activities to be undertaken for the development of the Metals Industrial Cluster have been identified and motivated in terms of the need and desirability for the activities to take place.
- » Impacts associated with the undertaking of the identified activities have been identified and has resulted in the identification of a suitable and preferable location for the development of the Metals Industrial Cluster. The preferred site (Portion 6253 of Erf 1) for the development of the Metals Industrial Cluster has been identified by the applicant through a site selection process.
- » Preferred areas for the development, which are areas associated with a low environmental sensitivity, have been identified within the site through a consultative and specialist informed site identification process which includes an impact assessment process (at a desktop level).
- » The location of the preferred site for the development of the Metals Industrial Cluster has been identified through the consideration of various aspects.
- » Key issues associated with the Metals Industrial Cluster to be addressed within the assessment phase for further detailed study and ground-truthing has been identified and listed within this scoping report.
- » The level of assessment, expertise and the extent of further consultation to be undertaken, with the aim of determining the extent of associated impacts of the activities through the life cycle of the development, have been identified and included within this Scoping report.

3.4. Overview of the Scoping Phase

The Scoping Phase has been undertaken in accordance with the EIA Regulations published in Government Gazette No 38282 in December 2014, in terms of the NEMA. Key tasks undertaken within the scoping phase included:

- » Consultation with relevant decision-making and regulating authorities (at Provincial and Local levels).
- » Submission of the completed application form for authorisation to the competent authority (Northern Cape Department of Environment and Nature Conservation - DENC) in terms of Regulations 5 and 16 of Government Notice R982 of 2014.
- » Undertaking a public participation process throughout the Scoping process in accordance with Chapter 6 of Government Notice R982 of 2014 in order to identify issues and concerns associated with the proposed development.
- » Undertaking of independent specialist studies in accordance with Appendix 6 of Government Notice R982 of 2014.
- » Preparation of a Scoping Report and Plan of Study for EIA in accordance with the requirements of Appendix 2 of Government Notice No R982 of 2014.

- » Preparation of a Comments and Response Report detailing key issues raised by I&APs as part of the Scoping phase.

The tasks are discussed in detail below.

3.4.1. Authority Consultation and Application for Authorisation in terms of GNR982 of 2014

As the development of the Metals Industrial Cluster is located in the Northern Cape Province, the competent authority responsible for the decision making regarding the authorisation of the project is the provincial department, the Northern Cape Department of Environment and Nature Conservation (DENC). Consultation with the relevant authority has been undertaken throughout the Scoping process. Authority consultation has included the following:

- » Submission of the application for authorisation to DENC;
- » Submission of the Scoping Report for review by Organs of State and the competent authority.

A record of all authority correspondence i.e. Provincial and Local authorities undertaken prior to and within the Scoping Phase is included in **Appendix C**.

3.4.2. Public Participation Process

Public participation is an essential and regulatory requirement for an environmental authorisation process and is guided by the Regulations under NEMA, specifically Regulation 41 of the EIA Regulations (GN R982 of December 2014).

The sharing of information forms the basis of the public participation process and offers the opportunity to Interested and Affected Parties (I&APs) to become actively involved in the EIA Process from the outset. The public participation process is designed to provide sufficient and accessible information to I&APs in an objective manner to assist them to:

During the Scoping Phase to:

- » identify issues of concern and suggestions for enhanced benefits;
- » verify that their issues have been recorded;
- » assist in identifying reasonable alternatives, where required; and
- » contribute relevant local information and knowledge to the environmental assessment.

During the EIA Phase to:

- » contribute relevant local information and knowledge to the environmental assessment;
- » verify that their issues have been considered in the environmental investigations; and
- » comment on the findings of the environmental assessments.

During the decision-making phase to:

- » be advised of the outcome of the competent authority's decision, and how and by when the decision can be appealed.

The public participation process therefore aims to ensure that:

- » Information that contains all the relevant facts in respect of the application is made available to I&APs for review.
- » Public participation is facilitated in such a manner that I&APs are provided with reasonable opportunity to comment on the proposed development.
- » Adequate review periods are provided to I&APs to comment on the findings of the Scoping and EIA Reports.

In order to ensure effective participation, the public participation process includes the following:

- » Distribution of project related information in the form of notification letters and a background information document prior to the release of the Scoping Report.
- » Identification of potential I&APs including:
 - State departments that administer a law relating to matters affecting the environment relevant to an application for an environmental authorisation;
 - all organs of state which have jurisdiction in respect of the activity to which the application for environmental authorisation relates;
 - owners, person in control of and occupiers of the site where the activity is to be undertaken or to any alternative site where the activity is to be undertaken;
 - owners, person in control of, and occupiers of land adjacent to the site where the activity is to be undertaken or to any alternative site where the activity is to be undertaken;
 - the municipal councillor of the ward in which the site or alternative site is situated and any organisation of ratepayers that represent the community in the area;
 - the municipality which has jurisdiction in the area.
- » Placement of site notices at the affected property.
- » Placement of an advertisement in a local newspaper.
- » Compilation of an I&AP database which is updated throughout the Scoping and EIA process.

- » On-going consultation with all registered I&APs regarding the progress in the EIA process through stakeholder consultation via notification letters, telephone calls and consultation meetings.
- » Release of the Scoping and EIA reports for 30-day review periods.
- » Holding meetings with I&APs to further facilitate the public participation process.

The following sections detail the tasks which have been undertaken to date as part of the public participation process for the proposed Metals Industrial Cluster.

i. Stakeholder identification

In terms of the EIA Regulations, 2014, affected and surrounding landowners have been identified and registered on the project database. Other stakeholders are required to formally register as stakeholders or interested and affected parties (I&APs) for the EIA process. The first step in the public participation process is to initiate the identification of potential I&APs. I&APs have been identified through a process of networking and referral, obtaining information from Savannah Environmental’s existing stakeholder database, liaison with potentially affected parties in the study area and a registration process involving completion of a registration and comment sheet. An initial list of stakeholders which have been identified and registered is listed in **Table 3.2** below:

Table 3.2: List of Stakeholders identified during the Scoping Phase

Organs of State
National Government Departments
Department of Agriculture, Forestry and Fisheries (DAFF)
Department of Water and Sanitation
Department of Mineral Resources
Government Bodies and State Owned Companies
Eskom SOC Limited
South African Civil Aviation Authority (CAA)
South African Heritage Resources Agency (SAHRA)
South African National Roads Agency Limited (SANRAL)
Ngwao-Boswa Ya Kapa Bokone (Northern Cape Provincial Heritage Resources Authority)
Square Kilometre Array: Southern Africa
Telkom SA Ltd
Provincial Government Departments
Northern Cape Department of Environment and Nature Conservation (Competent Authority)
Northern Cape Department of Agriculture, Land Reform and Rural Development
Northern Cape Department of Roads and Public Works
Northern Cape Department of Economic Development and Tourism

Local Government Departments
Ga-Segonyana Local Municipality - Municipal Manager - Ward Councillor (Ward 1)
John Taolo Gaetsewe District Municipality
Landowners
Neighbouring landowners and tenants

ii. **Register of Interested and Affected Parties**

As per Regulation 42 of the EIA Regulations, 2014 all relevant stakeholder and I&AP information has been recorded within a register of I&APs (refer to **Appendix C** for a listing of recorded parties). The register of I&APs contains the names, contact details and addresses of:

- » all persons who requested to be registered on the database in writing
- » all organs of state which hold jurisdiction in respect of the activity to which the application relates
- » all persons who submitted written comments or attended meetings during the public participation process.

While I&APs have been encouraged to register their interest in the EIA process from the onset, the identification and registration of I&APs will be on-going for the duration of the EIA process. The register of I&APs will be updated throughout the EIA process, and will act as a record of the parties involved in the public participation process.

iii. **Advertisements and Notifications**

In order to notify and inform the public of the proposed EIA process being undertaken for the Metals Industrial Cluster and invite members of the public to register as I&APs for this process, an advertisement was placed in the Kalahari Bulletin which is read in the broader area surrounding the site. The advertisement provides information on the following (in terms of Regulation 41):

- » the details of the project and applicant and
- » the availability of the Scoping Report for review.

Site notices (in English and Afrikaans) have been placed at visible points along the boundary of the site (Portion 6253 of Erf 1), in accordance with the requirements of the EIA Regulations. Further notices have been placed at the Ga-Segonyana local municipal offices. In addition to the advertisement and site notices, key stakeholders and registered I&APs have been notified in writing of the commencement of the EIA process and the availability of the Scoping Report for review. Copies of the advertisement, site notices and written notifications are included within **Appendix C**.

iv. Public Involvement and Consultation

In order to provide information regarding the proposed Metals Industrial Cluster and the EIA process, a background information document (BID) has been compiled (refer to **Appendix C**). The BID has been distributed to identified stakeholders and I&APs, and additional copies have been made available at public venues within the surrounding areas of the study area. The BID is also available electronically on the Savannah Environmental website.

Through consultation with key stakeholders and I&APs, issues for inclusion within the issues-based scoping study will be identified and confirmed. In order to accommodate the varying needs of stakeholders and I&APs within the communities surrounding of the study area, as well as capture their views, issues and concerns regarding the development, various opportunities have been and will continue to be provided in order for I&APs to note their issues. I&APs are being consulted through the following means:

- » Focus group meetings (pre-arranged and stakeholders invited to attend)
- » One-on-one consultation meetings (for example with directly affected or surrounding landowners)
- » Telephonic consultation sessions
- » Written, faxed or e-mail correspondence

v. Identification and Recording of Issues and Concerns

A Comments and Responses Report has been compiled and include all comments received to date through the public participation process undertaken. All comments and issues raised during the review period of the scoping report will be included in the Final Scoping Report that will be submitted to the DENC. The Comments and Responses Report has been included in **Appendix C**.

3.5. Review of the Scoping Report

The Scoping Report is available for 30 days for review from **01 April 2016–04 May 2016** at the following locations:

- » Hard copy at the Kuruman Public Library, School Street, Kuruman.
- » Available for download at www.savannahSA.com

Notification letters notifying I&APs of the availability of the Scoping Report have been distributed via email and registered post. Copies of the Scoping Report have been submitted to the following Organ of State departments for review and comments:

- » Department of Agriculture, Forestry and Fisheries (DAFF)
- » Department of Water and Sanitation
- » Department of Mineral Resources
- » Eskom SOC Limited
- » South African Civil Aviation Authority (CAA)
- » South African Heritage Resources Agency (SAHRA)
- » Ngwao-Boswa Ya Kapa Bokone (Northern Cape Provincial Heritage Resources Authority)
- » Square Kilometre Array: Southern Africa
- » Telkom SA Ltd
- » Northern Cape Department of Environment and Nature Conservation (Competent Authority)
- » Northern Cape Department of Agriculture, Land Reform and Rural Development
- » Northern Cape Department of Roads and Public Works
- » Northern Cape Department of Economic Development and Tourism
- » Ga-Segonyana Local Municipality including the Municipal Manager and the Ward Councillor (Ward 1).
- » John Taolo Gaetsewe District Municipality

3.5.1. Evaluation of Issues Identified through the Scoping Process

Issues (both direct and indirect environmental impacts) associated with the proposed development identified within the scoping process have been evaluated through desk-top studies. In identifying and evaluating potential impacts, the following specialists have provided input into the scoping process, as outlined in **Table 3.3** below.

Table 3.3: List of specialists providing an evaluation of the potential impacts associated with the proposed Metals Industrial Cluster

Specialist	Area of Expertise	Refer to Appendix
Gerhard Botha (Savannah Environmental)	Ecology	Appendix D
Jaco van der Walt (Heritage Contracts and Archaeological Consulting CC (HCAC))	Heritage and Archaeology	Appendix E
Candice Hunter (Savannah Environmental) and Neville Bews (Neville Bews and Associates)	Social and land use	Appendix F

In order to evaluate issues and assign an order of priority, it was necessary to identify the characteristics of each potential issue/impact:

- » *the nature*, which includes a description of what causes the effect, what will be affected and how it will be affected
- » *the extent*, wherein it is indicated whether the impact will be local (limited to the immediate area or site of development), regional or national.

The evaluation of the issues resulted in a description of the nature, significance, consequence, extent, duration and probability of the identified issues, as well as recommendations regarding further studies required within the EIA phase.

3.5.2. Finalisation of the Scoping Report

The final stage in the Scoping Phase will entail the capturing of comments from stakeholders and I&APs on the Scoping Report in order to finalise and the submission of the final Scoping Report to the Northern Cape Department of Environment and Nature Conservation for consideration.

3.6. Regulatory and Legal Context

The regulatory hierarchy for the development of this Metals Industrial Cluster consists of two tiers of authorities who exercise control through both statutory and non-statutory instruments - that is Provincial and Local levels.

3.6.1. Regulatory Hierarchy

At the **Provincial Level**, the main regulatory agencies are:

- » *Northern Cape Department of Environment and Nature Conservation* – This department is the competent authority identified for the project. This department aims to conserve the environment and its resources, promote sustainable use, protect and continually enhance environmental assets, enhance socio-economic benefits and employment creation for present and future generations from a healthy environment.
- » *Ngwao-Boswa Ya Kapa Bokone (Northern Cape Provincial Heritage Resources Authority)* - a statutory body responsible for the protection, conservation, management and interpretation of the heritage resources of the Northern Cape.

At the **Local Level**, the local and district municipal authorities are the principal regulatory authorities responsible for planning, land use and the environment. In the Northern Cape Province, both the local and district municipalities play a role. The local municipality is the Ga-Segonyana Local Municipality which forms part of the greater John Taolo Gaetsewe District Municipality.

3.6.2 Legislation and Guidelines that have informed the preparation of this Scoping Report

The following legislation and guidelines have informed the scope and content of this Scoping Report:

- » National Environmental Management Act (Act No. 107 of 1998)
- » EIA Regulations, published under Chapter 5 of NEMA (GNR R982 in Government Gazette No 38282 of December 2014)
- » The National Development Plan 2030
- » Northern Cape Provincial Development and Resource Management Plan/Provincial Spatial Development Framework (PSDF) (2012)
- » Northern Cape Provincial Growth and Development Strategy (PGDS) (2011)
- » Northern Cape Provincial Local Economic Development (LED) Strategy (2009)
- » John Taolo Gaetsewe District Municipality Integrated Development Plan (IDP) (2012-2019)
- » Ga-Segonyana Local Municipality Integrated Development Plan (IDP) (2015-2016)
- » International guidelines – the Equator Principles and the International Finance Corporation and World Bank Guidelines.

Several other Acts, standards or guidelines have also informed the project process and the scope of issues assessed in this scoping report. A listing of relevant legislation is provided in **Table 3.4**, where the level of applicability of the legislation or policy to the activity/project is detailed.

Table 3.4: Relevant legislative permitting requirements applicable to the proposed Metals Industrial Cluster.

Legislation	Applicable Requirements
National Legislation	
National Environmental Management Act (Act No 107 of 1998)	<ul style="list-style-type: none"> » The EIA Regulations have been promulgated in terms of Chapter 5 of the Act. Listed activities which may not commence without an environmental authorisation are identified within these Regulations. » In terms of S24(1) of NEMA, the potential impact on the environment associated with these listed activities must be assessed and reported on to the competent authority charged by NEMA with granting of the relevant environmental authorisation. » In terms of GN R982, R983, R984 and R985 of December 2014, a Scoping and EIA Process is required to be undertaken for the proposed PV facility.
National Environmental Management Act (Act No 107 of 1998)	<ul style="list-style-type: none"> » In terms of the Duty of Care Provision in S28(1) the project proponent must ensure that reasonable measures are taken throughout the life cycle of the facility to ensure that any pollution or degradation of the environment associated with the development of the facility is avoided, stopped or minimised. » In terms of NEMA, it has become the legal duty of a project proponent to consider a project holistically, and to consider the cumulative effect of a variety of impacts.
Environment Conservation Act (Act No 73 of 1989)	National Noise Control Regulations (GN R154 dated 10 January 1992)
National Water Act (Act No 36 of 1998)	<ul style="list-style-type: none"> » Water uses under S21 of the Act must be licensed, unless such water use falls into one of the categories listed in S22 of the Act or falls under the general authorisation (and then registration of the water use is required). » Consumptive water uses may include the taking of water from a water resource and storage - Sections 21a and b. » Non-consumptive water uses may include impeding or diverting of flow in a water course - Section 21c; and altering of bed, banks or characteristics of a watercourse - Section 21i.
Minerals and Petroleum Resources Development Act (Act No 28 of 2002)	<ul style="list-style-type: none"> » A mining permit or mining right may be required where a mineral in question is to be mined in accordance with the provisions of the Act. » S53 Department of Mineral Resources: Approval from the Department of Mineral Resources

Legislation	Applicable Requirements
	<p>(DMR) may be required to use land surface contrary to the objects of the Act in terms of section 53 of the Mineral and Petroleum Resources Development Act, (Act No 28 of 2002): In terms of the Act approval from the Minister of Mineral Resources is required to ensure that the proposed activities do not sterilise a mineral resource that might occur on site.</p>
<p>National Environmental Management: Air Quality Act (Act No 39 of 2004)</p>	<ul style="list-style-type: none"> » Measures in respect of dust control (S32) and National Dust Control Regulations of March 2014. » Measures to control noise (S34)
<p>National Heritage Resources Act (Act No 25 of 1999)</p>	<ul style="list-style-type: none"> » Stipulates assessment criteria and categories of heritage resources according to their significance (S7). » Provides for the protection of all archaeological and palaeontological sites, and meteorites (S35). » Provides for the conservation and care of cemeteries and graves by SAHRA where this is not the responsibility of any other authority (S36). » Lists activities which require developers or any person who intends to undertake such an activity to notify the responsible heritage resources authority and furnish it with details regarding the location, nature, and extent of the proposed development (S38). » Requires the compilation of a Conservation Management Plan as well as a permit from SAHRA for the presentation of archaeological sites as part of tourism attraction (S44).
<p>National Environmental Management: Biodiversity Act (Act No 10 of 2004)</p>	<ul style="list-style-type: none"> » Provides for the MEC/Minister to identify any process or activity in such a listed ecosystem as a threatening process (S53) » A list of threatened and protected species has been published in terms of S 56(1) - Government Gazette 29657. » Three government notices have been published, i.e. GN R150 (Commencement of Threatened and Protected Species Regulations, 2007), GN R151 (Lists of critically endangered, vulnerable and protected species) and GN R152 (Threatened or Protected Species Regulations). » Provides for listing threatened or protected ecosystems, in one of four categories: critically endangered (CR), endangered (EN), vulnerable (VU) or protected. The first national list of

Legislation	Applicable Requirements
	<p>threatened terrestrial ecosystems has been gazetted, together with supporting information on the listing process including the purpose and rationale for listing ecosystems, the criteria used to identify listed ecosystems, the implications of listing ecosystems, and summary statistics and national maps of listed ecosystems (National Environmental Management: Biodiversity Act: National list of ecosystems that are threatened and in need of protection, (G 37596, GN 324), 29 April 2014).</p> <p>» This Act also regulates alien and invader species.</p>
<p>Conservation of Agricultural Resources Act (Act No 43 of 1983)</p>	<p>» Prohibition of the spreading of weeds (S5)</p> <p>» Classification of categories of weeds & invader plants (Regulation 15 of GN R1048) & restrictions in terms of where these species may occur.</p> <p>» Requirement & methods to implement control measures for alien and invasive plant species (Regulation 15E of GN R1048).</p>
<p>National Forests Act (Act No. 84 of 1998)</p>	<p>» According to this Act, the Minister may declare a tree, group of trees, woodland or a species of trees as protected. The prohibitions provide that 'no person may cut, damage, disturb, destroy or remove any protected tree, or collect, remove, transport, export, purchase, sell, donate or in any other manner acquire or dispose of any protected tree, except under a licence granted by the Minister'.</p>
<p>National Veld and Forest Fire Act (Act 101 of 1998)</p>	<p>» In terms of S13 the landowner must ensure that the firebreak is wide and long enough to have a reasonable chance of preventing the fire from spreading, not causing erosion, and is reasonably free of inflammable material.</p> <p>» In terms of S17, the applicant must have such equipment, protective clothing, and trained personnel for extinguishing fires.</p>
<p>Hazardous Substances Act (Act No 15 of 1973)</p>	<p>» This Act regulates the control of substances that may cause injury, or ill health, or death due to their toxic, corrosive, irritant, strongly sensitising or inflammable nature or the generation of pressure thereby in certain instances and for the control of certain electronic products. To provide for the rating of such substances or products in relation to the degree of danger; to provide for the prohibition and control of the importation, manufacture, sale, use, operation, modification, disposal or dumping of such substances and products.</p>

Legislation	Applicable Requirements
	<ul style="list-style-type: none"> » Group I and II: Any substance or mixture of a substance that might by reason of its toxic, corrosive etc., nature or because it generates pressure through decomposition, heat or other means, cause extreme risk of injury etc., can be declared as Group I or Group II substance » Group IV: any electronic product; and » Group V: any radioactive material. <p>The use, conveyance, or storage of any hazardous substance (such as distillate fuel) is prohibited without an appropriate license being in force.</p>
<p>National Environmental Management: Waste Act, 2008 (Act No. 59 of 2008)</p>	<p>The Minister may by notice in the Gazette publish a list of waste management activities that have, or are likely to have, a detrimental effect on the environment.</p> <p>The Minister may amend the list by –</p> <ul style="list-style-type: none"> » Adding other waste management activities to the list. » Removing waste management activities from the list. » Making other changes to the particulars on the list. <p>In terms of the Regulations published in terms of this Act (GN 921), a Basic Assessment or Environmental Impact Assessment is required to be undertaken for identified listed activities.</p> <p>Any person who stores waste must at least take steps, unless otherwise provided by this Act, to ensure that:</p> <ul style="list-style-type: none"> » The containers in which any waste is stored, are intact and not corroded or in any other way rendered unfit for the safe storage of waste. » Adequate measures are taken to prevent accidental spillage or leaking. » The waste cannot be blown away.

Legislation	Applicable Requirements
	<ul style="list-style-type: none"> » Nuisances such as odour, visual impacts and breeding of vectors do not arise; and » Pollution of the environment and harm to health are prevented.
Subdivision of Agricultural Land Act (Act No 70 of 1970)	Details land subdivision requirements and procedures. Applies for subdivision of all agricultural land in the Province.
National Road Traffic Act (Act No 93 of 1996)	<ul style="list-style-type: none"> » The technical recommendations for highways (TRH 11): "Draft Guidelines for Granting of Exemption Permits for the Conveyance of Abnormal Loads and for other Events on Public Roads" outline the rules and conditions which apply to the transport of abnormal loads and vehicles on public roads and the detailed procedures to be followed in applying for exemption permits are described and discussed. » Legal axle load limits and the restrictions imposed on abnormally heavy loads are discussed in relation to the damaging effect on road pavements, bridges, and culverts. » The general conditions, limitations, and escort requirements for abnormally dimensioned loads and vehicles are also discussed and reference is made to speed restrictions, power/mass ratio, mass distribution, and general operating conditions for abnormal loads and vehicles. Provision is also made for the granting of permits for all other exemptions from the requirements of the National Road Traffic Act and the relevant Regulations.
Provincial Legislation	
Northern Cape Nature Conservation Act, No. 9 of 2009	<p>Nature Conservation Act accompanied by all amendments is regarded by the Northern Cape Province as the legal binding, provincial documents, providing regulations, guidelines and procedures with the aim of protecting game and fish, the conservation of flora and fauna and the destruction of problematic (vermin and invasive) species.</p> <p>This act should be considered in its entirety, with special reference to:</p> <ul style="list-style-type: none"> » Schedule 1: Specially Protected Species » Schedule 2: Protected Species » Schedule 6: Invasive Species

DESCRIPTION OF THE RECEIVING ENVIRONMENT

CHAPTER 4

This section of the Scoping Report provides a description of the environment that may be affected by the development of the Metals Industrial Cluster. This information is provided in order to assist the reader in understanding the receiving environment within which the proposed development is situated. Features of the biophysical, social and economic environment that could directly or indirectly be affected by, or could affect, the proposed development have been described. This information has been sourced from existing information available for the area, and aims to provide the context within which this EIA is being conducted. As the Metals Industrial Cluster will be located within the entire Portion 6253 of Erf 1 the full extent of the site is described below, as well as the surrounding area. A comprehensive description of each aspect of the affected environment is included within the specialist scoping reports contained within the **Appendices D-F**.

4.1. Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required by Appendix 2: Content of the Scoping Report of the EIA Regulations, 2014:

Requirement	Relevant Section
(h)(iv) the environmental attributes associated with the alternatives focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	<p>The environmental attributes associated with the development of the Metals Industrial Cluster is included as a whole within this chapter. The environmental attributes that are assessed within this chapter includes the following:</p> <ul style="list-style-type: none"> » The regional setting referring to the location of the site. This is included in section 4.2. » The climatic conditions associated with the Kuruman area, as well as the site. This is included in section 4.3. » The biophysical characteristics of the area including topography and landscape features, geology, soil and land types, hydrology and ecological profile. This is included within section 4.4. » Available access and transportation routes in the region of the study area and surrounding the site. This is included in section 4.5.

- » The social characteristics, including the socio-economic profiles of the regional context and local context. This is included in section 4.6
- » Heritage features that occur in the region and could possible occur on-site, including archaeological and palaeontological resources. This is included in section 4.7.

4.2 Regional Setting: Location of the Study Area

The vast and arid Northern Cape is by far the largest and most sparsely populated province in South Africa, taking up nearly a third of South Africa's land area. The capital city of the province is the town of Kimberley. The Province houses the Kalahari Gemsbok National Park, which forms part of the Kgalagadi Transfrontier Park. The Orange River (Gariiep River) traverses the Province and acts as the boundary between the Northern Cape Province and Namibia located to the north.

The town of Kuruman is the closest town located in the vicinity of the project site and the main town in the Kalahari region of the Namakwari Route. Kuruman is also known as the "Oasis of the Khalahari". The town is set on the Ghaap Plateau and is located 1131m above sea level. A permanent and abundant source of water in the form of a mineral spring is present within the area known as "The Eye". Mining and agricultural activities (including cattle and game) support Kuruman's growing economy. Various minerals are being mined within the area including manganese ore, iron ore, tiger's eye and crocidolite (blue asbestos). The deposits of crocidolite found in the Kuruman district are considered to be the richest of the world.

The site for the proposed Metals Industrial Cluster is located ~2km south east of the town of Kuruman on Portion 6253 of Erf 1 (refer to **Figure 4.1**) and falls under the jurisdiction of the Ga-Segonyana Local Municipality (GSLM) and within the greater John Taolo Gaetswe District Municipality (JTGDM) in the Northern Cape Province. The site is located within the urban edge of Kuruman with the areas surrounding the site mostly transformed as a result of the construction of infrastructure such as roads and buildings utilised by the town. Developments located in close proximity to the site is the Kuruman Country Club located approximately 200m south east of the site and the El Dorado Hotel (three star rating) located approximately 250m north west of the site. Located ~2.2km west of the proposed site is an existing industrial development, known as the Kuruman Industrial park. The built-up area of the town of Kuruman is located approximately 250m north west of the site and has ~13 057 inhabitants. An airport, known as the Johan Pienaar Airport is located to the west of Kuruman (~1.2km) and is located ~3.7km north west of the proposed site for the development of the Metals Industrial Cluster.

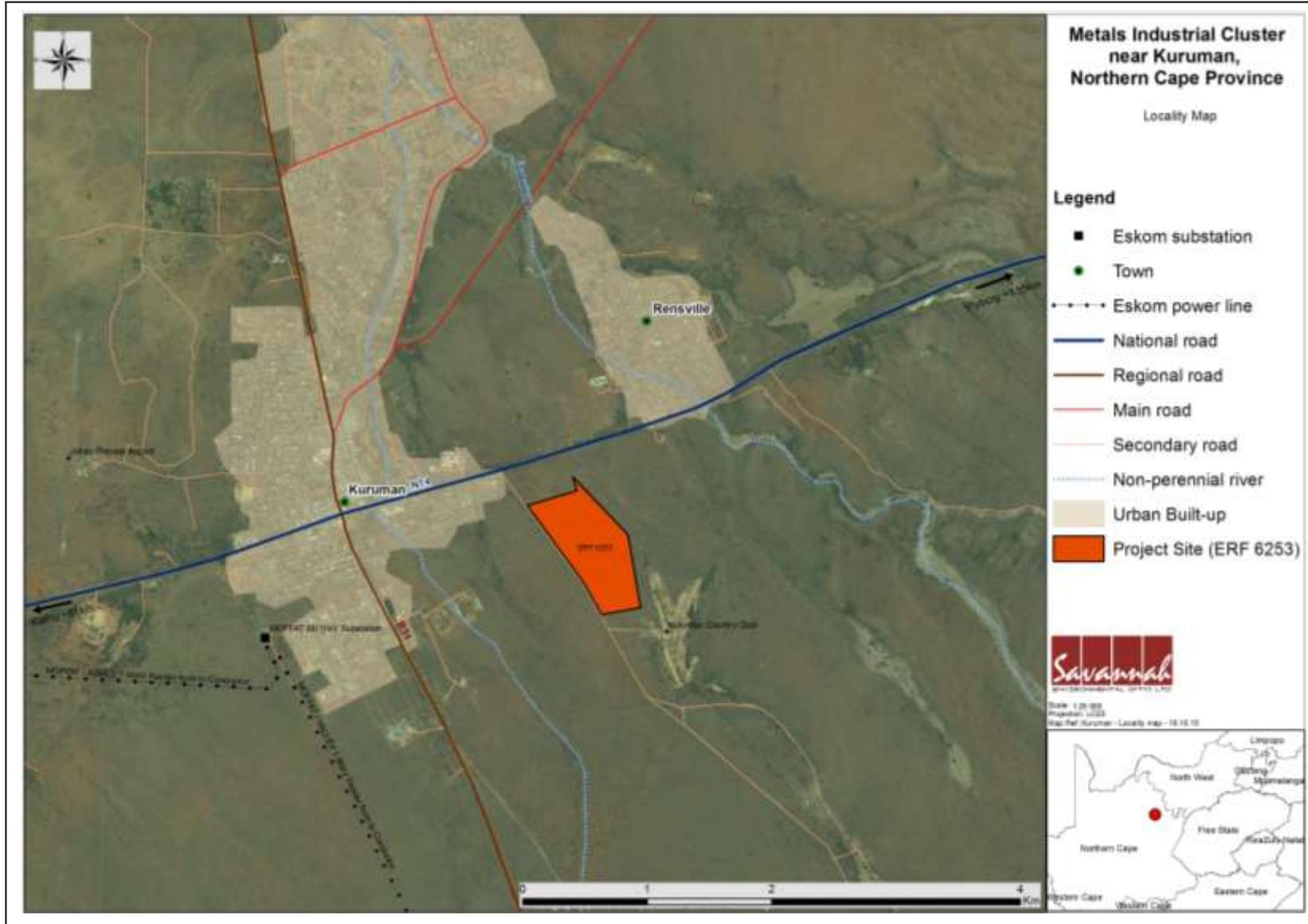


Figure 4.1: Regional context and location of the Metals Industrial Cluster project site.

The land portion proposed for the development of the Metals Industrial Cluster is owned by the GSLM, and an agreement to establish and operate the development with the Northern Cape Department of Economic Development and Tourism has been put in place. The site is located in close proximity to the existing national road, N14, which is located approximately 300m north of the site. Other existing infrastructure in the surrounding area includes power lines and a substation. The Moffat 66/11kV Substation is located ~2.5km to the west of the site and the Moffat/Asbes 1 66kV and the Moffat/valley 1 66kV power lines are also located approximately ~2.5km west of the site.

4.3 Climatic Conditions

The climate associated with the study area has been derived from recorded and extrapolated climatic data for Kuruman. The following characteristics describe the climate associated with Kuruman (as illustrated in **Figure 4.2**): i) the climate can be described as semi-arid, ii) rainfall is fairly low with an average rainfall of 472mm and occurs mainly in late summer or early autumn with the highest precipitation occurring in March (85mm), iii) rainfall occurs mainly in the form of thunderstorms when tropical air from the north reaches the area due to frontal systems, iv) July is the driest month with only 3mm of precipitation expected, v) the average annual temperature in Kuruman is 17.6°C with January being the warmest (Ave. 24.4°C) and July being the coldest (Ave 9.6°C), vi) frost incidence frequent in winter and may range up to 36 frost days per year, vii) the humidity is generally the highest in February and lowest in August, viii) the average gross potential mean annual evaporation (as measured by Class A-pan) ranges from 2 646mm to 2 690mm which is nearly five times the annual precipitation, and ix) the mean annual wind speed is 3.5m/s, while speeds in excess of 8 m/s occur about 6% of the time.

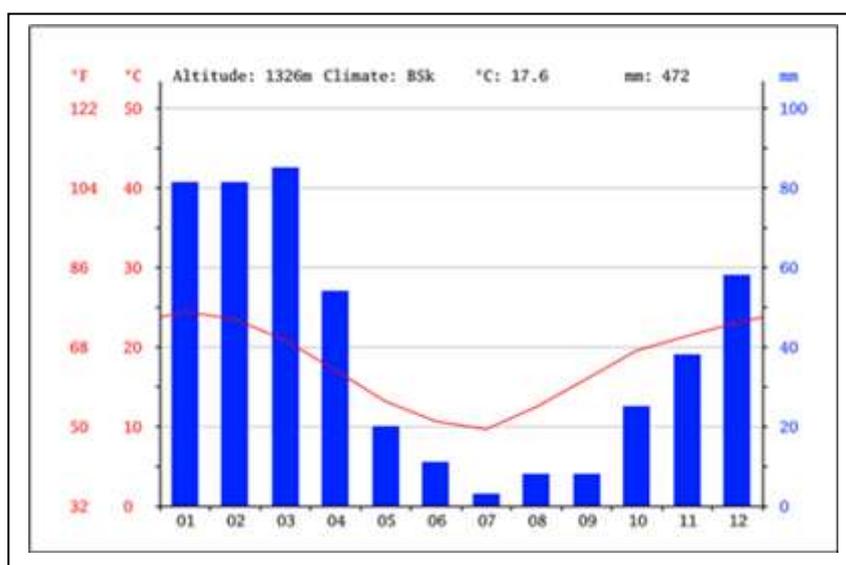


Figure 4.2: Climate graph for the town of Kuruman, Northern Cape Province.

4.4 Biophysical Characteristics of the Study Area

The following section provides an overview and description of the biophysical characteristics of the study area.

4.4.1 Topography and landscape features

The landscape can be described as flat rocky plains containing some sloping hills with a very well developed closed shrub layer and open tree stratum consisting predominantly of *Acacia erioloba* (*Vachellia erioloba*) (Mucina & Rutherford, 2006). According to the terrain description provided within the land type classification data (AGIS 2007) most of the landscape can be classified as Class A2, which relates to little or no erosion hazard, with more than 80% of the area containing a slope of less than 8%..

4.4.2. Geology

The entire property is situated on carbonate rock; fine and coarse-grained dolomite, chert and dolomitic limestone; of the Campbell Rand Supergroup (AGIS, 2007) (refer to **Figure 4.3**). Some areas may contain overlaying younger superficial Kalahari Group sediments, with red wind-blown sand. Another feature of this Supergroup is the presence of locally, rocky pavements formed in places (Mucina & Rutherford, 2006). From satellite imagery these pavements appear to be absent from the study area.

4.4.3. Soil and land types

The entire site as well as the immediate surroundings are located within the Ae9 land type (refer to **Figure 4.4**). The Ae group of land types refer to red-yellow apedal, freely drained soils. These soils are moderately deep (on average 500mm – 1200mm) red, freely drained and apedal (structureless). These soils generally occur in areas associated with low to moderate rainfall (300mm – 700mm per annum) in the interior of South Africa and have a high fertility status. A wide range of texture occurs (usually sandy loam to sandy clay loam) within these land types. Common soil forms are Mispah and Hutton and, to a lesser extent, Clovely, Stertkspruit and Rensburg.

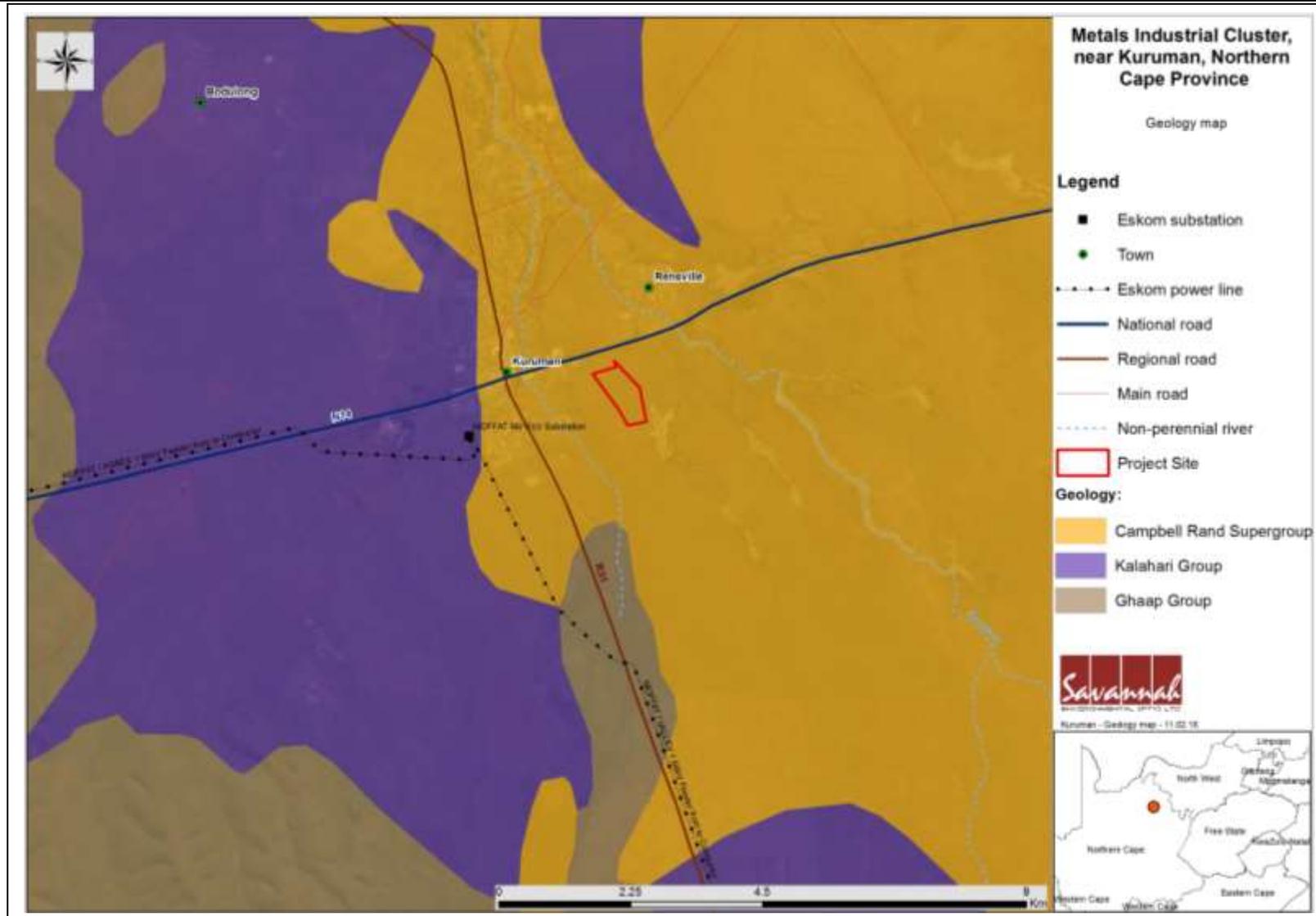


Figure 4.3: Geological map for the broader study area, including the site earmarked for the Metals Industrial Cluster site.

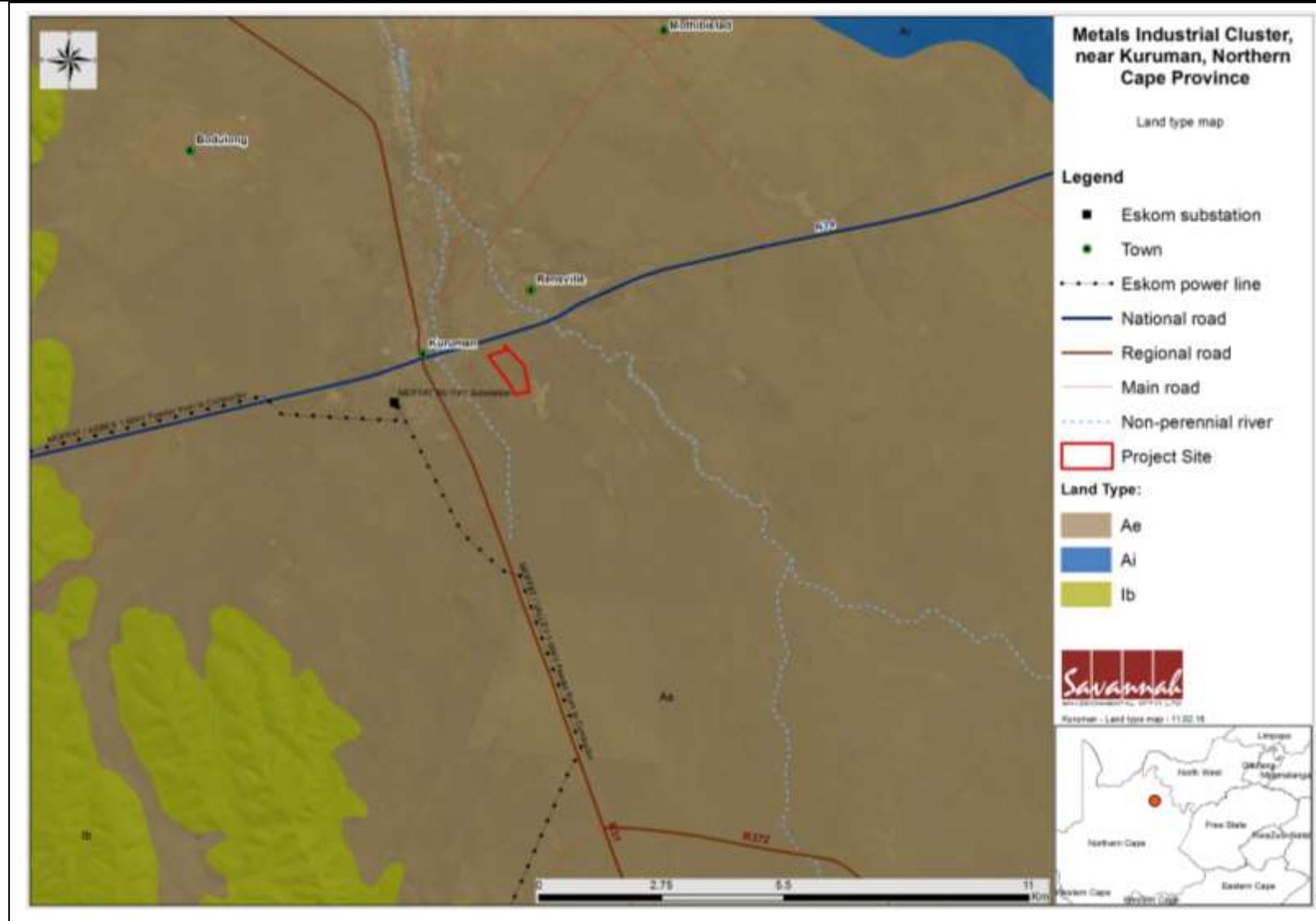


Figure 4.4: Soil and land type map for the broader study area, including the site earmarked for the Metals Industrial Cluster site.

4.4.4. Hydrology

The site falls within the Lower Vaal Water Management Area (WMA) and within quaternary catchment D41L.

Most of the landscape to the south and south east is characterised by flat featureless plains of the Ghaap Plateau. The plateau gradually declines northwards to reach the non-perennial Kuruman River. From the Kuruman River the topographic gradient decreases to reach the Molopo River. The non-perennial rivers Matlhwareng and Moshaweng join the Kuruman River from the east. No perennial rivers exist and run-off accumulation in surface depressions can persist for several weeks until water has evaporated or infiltrated into the ground.

The non-perennial Kuruman River flows intermittent due to flood water from the Matlhwareng and Moshaweng rivers. The Matlhwareng River flows almost every year for a short distance, however flood waters reach the confluence with the Kuruman River only every 20 years.

According to satellite imagery, there are no drainage- or wetland features located within the site proposed for the development of the Metals Industrial Cluster. All wetland and drainage features present within the surrounding areas (i.e. outside of the boundaries of the site) are located between ~65-110m away from the site. Other features located outside of the site are unchannelled valley bottom wetlands and channelled valley bottom wetlands located to the east and south east of the site as identified within the National Freshwater Priority Areas (NFPA) (refer to **Figure 4.5** and **Figure 4.6** below). The study area gently slopes in a north-eastern direction towards an ephemeral tributary which flows in a northern direction to join the non-perennial Kuruman River located 1.4 km west from the site. Just south-east of the proposed study area, this ephemeral tributary has been severely impacted by the Kuruman Country Club located to the south of the site. Approximately 60km west from the proposed site another ephemeral stream is located, flowing in a north-western direction to join the Kuruman River to the north.

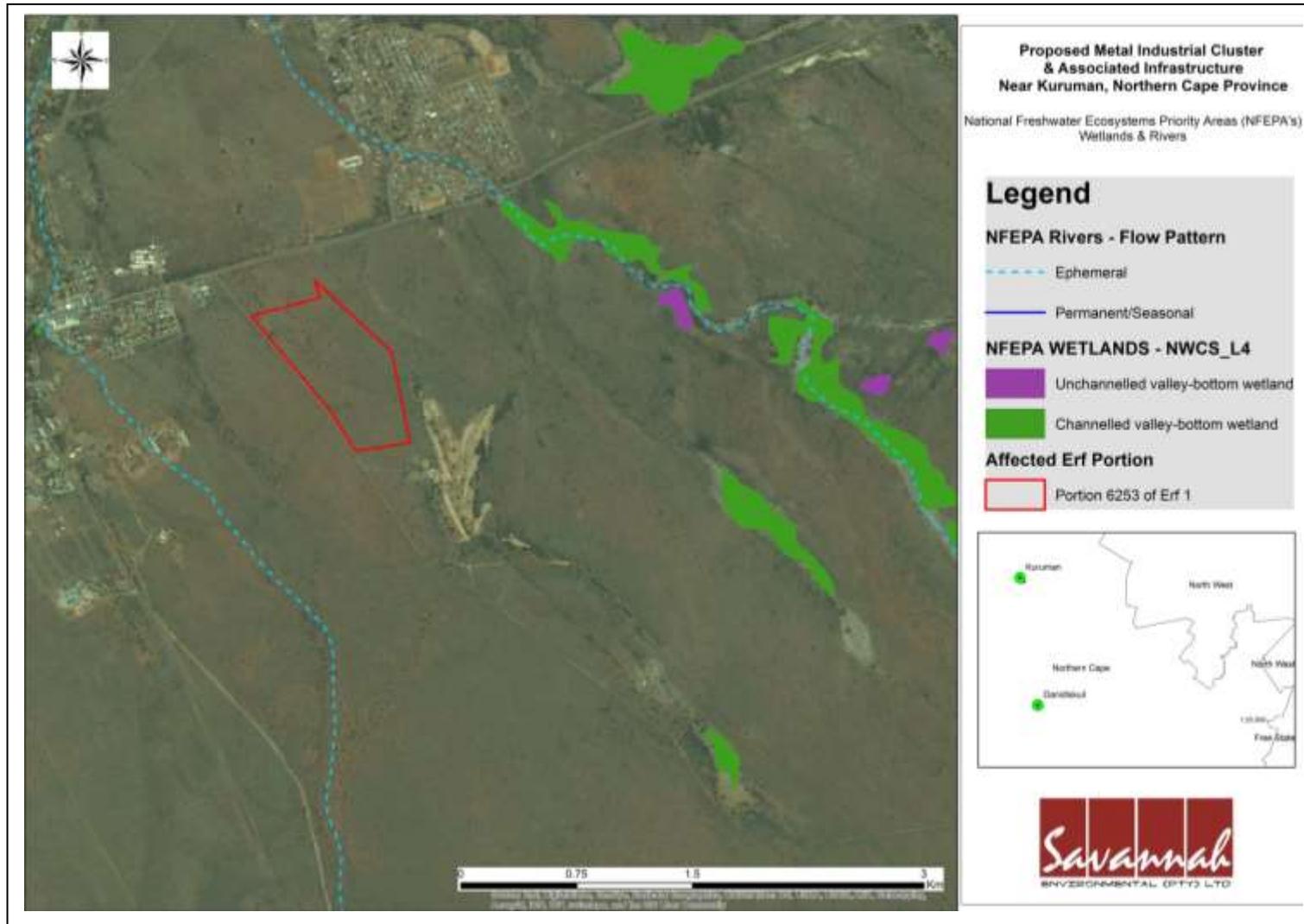


Figure 4.5: Wetlands and ephemeral rivers as identified within the National Freshwater Priority Areas (NFEPAs) found within the surrounding environment (no watercourses or wetlands have been identified within the proposed footprint area).

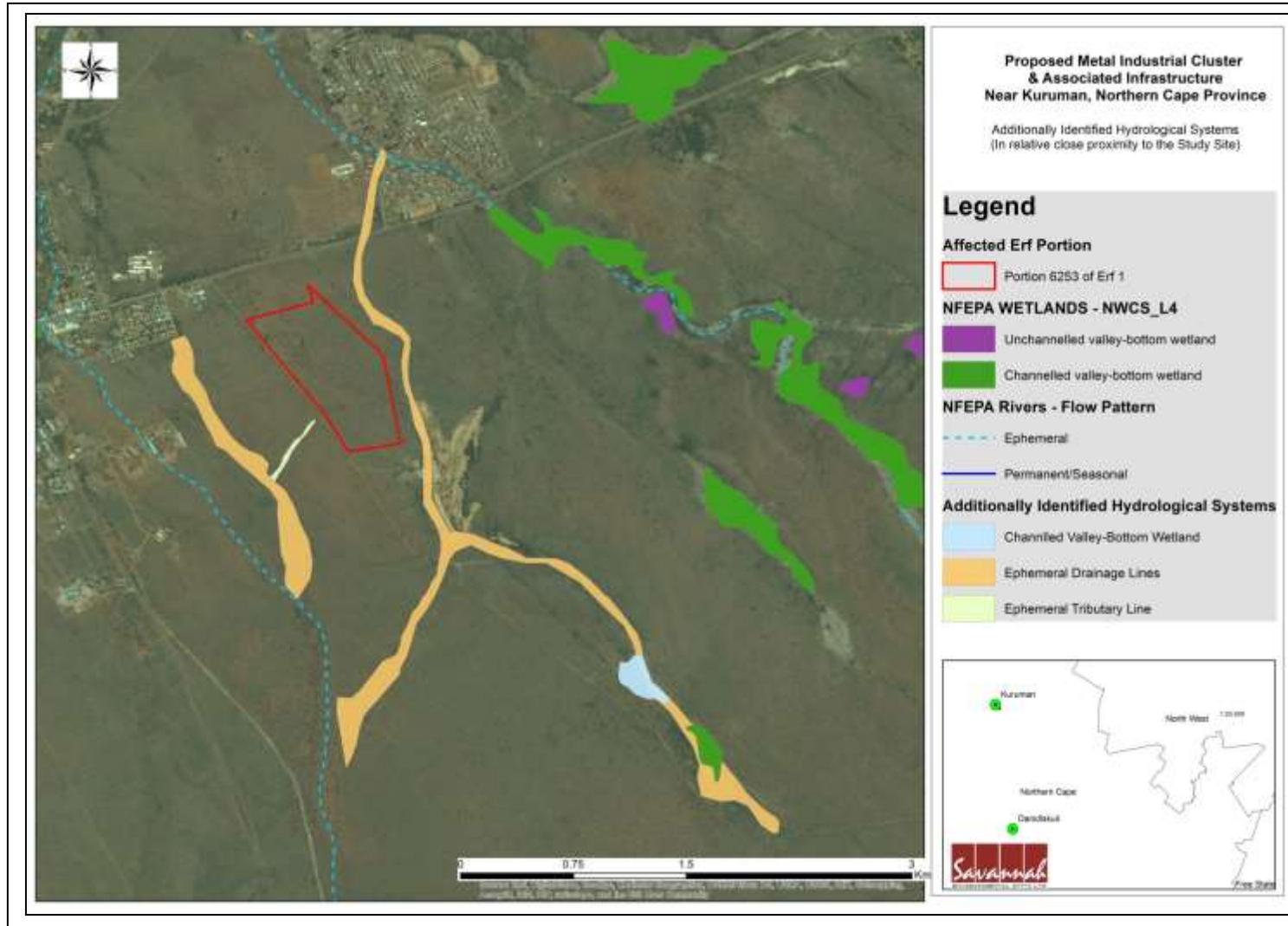


Figure 4.6: Wetlands and ephemeral streams identified (apart from those identified within NFEPA) using satellite imagery (no watercourses or wetlands have been identified within the proposed footprint area).

Intergranular, karst, weathered and fractured bedrock aquifers are present in the different geological formations characterizing the D41L sub-quadernary catchment area. The karst aquifers associated with the Ghaap Plateau dolomite formations, are highly productive. Intrusive dykes with low to impervious hydraulic conductivity compartmentalise some of these dolomite aquifers.

Intergranular aquifers are present by the upper (Eden Formation) as well as basal sand and gravel beds (Wessel Formation) of the Kalahari sediments. These aquifers are characterised by lower productivity than karst aquifers, but have the ability to store large volumes of water. They are separated by the red clays of the Budin Formation acting as a confining layer. The basal sand and gravel formation and underlying bedrock can be regarded as one aquifer. In the absence of red clays the upper sand and gravel aquifer of the Eden Formation are in hydraulic conductivity with the bedrock aquifers. The importance of all aquifers in the D41L has been classified according to the aquifer classification system developed by the Water Research Commission, "A South African Aquifer System Management Classification" (Parsons, 1995). According to this system the aquifers are classified as follows:

- » Karst and fractured aquifers (Dolomite): Major Aquifer System
- » Weathered and fractured aquifer (Dolomite and Banded Iron Formation): Major Aquifer System
- » Intergranular Kalahari sediments (Basal sand and Eden Gravel): Minor Aquifer System
- » Intergranular and fractured Rock Aquifer (Lava): Poor Aquifer System.

4.4.5. Ecological Profile

The following section provides a description of the ecological profile present within the site and the surrounding areas.

Vegetation description

Distribution, key landscape and vegetation features

According to the national vegetation map (Mucina & Rutherford 2006), the entire study area and immediate surroundings are covered by a single vegetation type; that is, Kuruman Thornveld (SVk 9). Kuruman Thornveld falls within the Savanna Biome and the Eastern Kalahari Bushveld Bioregion. This vegetation type has a distribution throughout the Northern Cape and North West Province, where it is found on the flats from the vicinity of Postmasburg and Danielskuil in the south extending via Kuruman to Tsineng and Dewar in the north. This vegetation type is found on flat rocky plains and some sloping hills, where it contains a very well-developed, closed shrub layer and well-developed open tree stratum consisting of predominantly *Acacia erioloba* (*Vachelia erioloba*).

The tree layer is characterised by *Acacia erioloba*, *A. mellifera* subsp. *detinens* (*Senegalia mellifera* subsp. *detinens*), and *Boscia albitrunca*. Tall shrubs are mainly characterised by *Grewia flava*, *Lycium hirsutum* and *Trachonanthus camphoratus*. The vegetation unit contains a well-developed, closed shrub layer with; *Acacia hebeclada* subsp. *hebeclada* (*Vachelia hebeclada* subsp. *hebeclada*), *Monechma divaricatum*, *Gnidia polycephala*, *Helichrysum zeyheri*, *Hemannia comosa*, *Pentzia calcarea* and *Plinthus sericeus* forming the dominant species within this stratum. Grasses (graminoids) are characterised by a few *Aristida* species; most notably *A. stipitata* subsp. *stipitata*; as well as *Eragrostis* species, with *E. lehmanniana* and *E. echinochloidea* being the most noteworthy species. The herbaceous layer may also be well developed and species rich, characterised by the following species; *Dicoma schinzii*, *Gisekia africana*, *Harpagophytum procumbens* subsp. *procumbens*, *Indigofera daleoides*, *Limeum fenestratum*, *Nolletia ciliaris*, *Seddera capensis*, *Tripteris aghillana* and *Vahlia capensis* subsp. *vulgaris*. The geoxylic suffrutex; *Elephantorrhiza elephantina* may also form dominant stands (Mucina & Rutherford, 2006).

Disturbed areas may be characterised by the dominance of the following species; *Aristida adscensionis*, *A. congesta*, *Enneapogon scoparius*, *Geigeria ornativa*, *Melhania rehmanii*, *Rhigozum trichotomum* and *Sericorema remotiflora*. The tree and tall shrub layers may also be severely transformed with the absence of diagnostic species such as *A. erioloba*, *A. haematoxylon* and *Grewia flava* (Mucina & Rutherford, 2006).

Biogeographically Important and Endemic Taxa that could be present include the following:

- » Griqualand West Endemic: *Blepharis marginata* (Low Shrub), *Digitaria polyphylla* (Graminoid) and *Corchorus pinnatipartitus* (Herb)
- » Kalahari Endemic: *Acacia leuderizii* var. *luederizii* / *Vachelia leuderizii* (Small Tree) and *Acacia haematoxylon* (Tall Shrub)
- » Kuruman Thornveld Endemic: *Gnaphalium englerianum* (Herb)
- » Southernmost distribution in interior of southern Africa: *Terminalia sericea*

Conservation status

Kuruman Thornveld is classified as a Least Threatened ecosystem. This vegetation type is furthermore not included within the National List of Threatened Ecosystems (2011). This vegetation type is poorly conserved, with none conserved in statutory conservation areas. The largest portion of this vegetation type is still in a natural and/or near-natural state, with only 2% transformed (Mucina & Rutherford, 2006).

Listed and protected plant species

Of the 675 species recorded a total of 67 species are regarded as conservation-worthy species. The bulk of the 67 conservation-worthy species are Protected

Species according to Schedule 2 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009); namely 60 species. Four species are regarded as Specially Protected according to Schedule 1 of the Northern Cape Nature Conservation Act, 2009 (Act No. 9 of 2009) and include *Sutherlandia frutescens*, *Pelargonium myrrhifolium*, *Pelargonium senecioides* and *Harpagophytum procumbens*. *H. procumbens* is also furthermore listed as a Protected Species within the National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Publication of Lists of Critically Endangered, Endangered, Vulnerable and Protected species. *Acacia erioloba* is the only tree species recorded within the POSA database (for 2723A) which is protected within the National Forests Act, 1998 (Act No. 84 of 1998). *Boscia albitrunca*, which is also a protected tree species according to the National Forest Act, may also occur within the area, although the species is not listed within the POSA list. A total of four species recorded is included in the IUCN's Red Data List and include *Antimima lawsonii* (Rare), *Drimia sanguinea* (Near Threatened), *Cleome conrathii* (Near Threatened) and *Acacia erioloba* (Declining).

Invasive and Exotic Plants

A number of invasive and exotic plants (total of 44 species) have been recorded for the 2723A half degree grid. Most of these species are dwarf shrubs and herbaceous species. Only five species are listed as Invasive Species in terms of Section 70(1)(A) – National Environmental Management: Biodiversity Act, 2004 (Act 10 of 2004): Alien and Invasive Species List, 2014. All of these species are regarded as Category 1b invasive species and include; *Argemone ochroleuca*, *Cirsium vulgare*, *Datura stramonium*, *Salvia stenophylla* and *Verbena brasiliensis*.

Faunal Communities

Mammals

The site falls within the distribution range of 68 terrestrial mammals, which includes 11 bat species. Although this is moderate to low it is expected that the mammalian diversity at the site would be low on account of the limited range of habitats available, the close proximity to the town and the fractured landscape cut off by roads and other developments (for example the adjacent Kuruman Country Club). At a broad scale, however, it is likely that a large proportion of these species occur in the area. No species associated with rocky outcrops are likely to occur within the proposed study area, which would significantly reduce the number of the species that would be directly affected. As the affected habitat is widely available in the area, as well as at a broader scale, the impacts would most likely be local in nature and it is not likely that the long-term viability of any populations of terrestrial mammals would be compromised by the development.

Seven listed terrestrial mammals may occur at the site, i.e. the Honey Badger *Mellivora capensis* (Endangered), Brown Hyaena *Hyaena brunnea* (Near

Threatened), Black-footed cat *Felis nigripes* (Vulnerable), South African Hedgehog *Atelerix frontalis* (Near Threatened), Dent's Horseshoe Bat *Rhinolophus denti* (Near Threatened), Geoffroy's Horseshoe Bat *Rhinolophus clivosus* (Near Threatened) and Schreibers's Long Fingered Bat *Miniopterus schreibersii* (Near Threatened). Although the area is used for livestock production, human activity in the area is low and it is possible that all the listed species could occur in the area.

The development footprint areas lie within the distribution range of 11 bat species, indicating that the richness of bats at the site is probably quite low. Bat activity is expected to be focused along the perennial rivers and where food as well as natural and artificial shelter is more readily available. The lack of wetlands and large drainage lines as well as other habitat types and roosting sites within the study area suggests that bat activity patterns within the site are likely to be low.

Within the ADU (Animal Demographic Unit) database 47 species are listed to have been recorded within the 2723 Degree Grid and include four listed species such as the South African Hedgehog *Atelerix frontalis* (Near Threatened), Dent's Horseshoe Bat *Rhinolophus denti* (Near Threatened), Geoffroy's Horseshoe Bat *Rhinolophus clivosus* (Near Threatened) and Schreibers's Long Fingered Bat *Miniopterus schreibersii* (Near Threatened). Five bovine species are also included within this list which do not historically have a natural distribution range or have been removed from the environment. These species have rather been introduced by farmers onto farms for hunting and farming purposes and their movement are largely restricted by camps and fences. These include antelope species such as Impala (*Aepyceros melampus*), Hartebeest (*Alcelaphus buselaphus*), Black Wildebeest (*Connochaetes gnou*), Waterbuck (*Kobus ellipsiprymnus*), Gemsbok (*Oryx gazelle*) and Common Eland (*Tragelaphus oryx*).

Reptiles

The site lies within the distribution range of 42 reptile species, suggesting that the reptile diversity in the area is likely to be low. Within the affected plains habitat, the reptile composition is likely to be dominated by species which inhabit open areas, such as Horned Adders, Sand Lizards, Ground and Barking Geckos. As there are no large rocky outcrops within the proposed site, species associated with rocky habitats are not likely to occur and would not be impacted by the development. The development would likely create some novel habitats for reptiles, which would potentially benefit a limited number of species that could take advantage of the novel habitat created within the development area. This is likely to be restricted to species such as geckos and agamas, which would utilise the buildings and other vertical infrastructure of the development. This would however be a very limited number of species.

Amphibians

The site lies within the distribution range of 11 amphibian species. Although the diversity can be regarded as low it is expected that the amphibian diversity at the site would be even lower on account of the limited range of habitats available. At a broad scale, however, it is likely that a large proportion of these species occur within the area. No species associated with perennial and non-perennial water habitats are likely to occur within the proposed development area, which would significantly reduce the number of the species that would be directly affected.

4.5 Access and Transport Routes in the Region

The major access and transport route to the proposed site is the national road, N14, which is located approximately 300m to the north of the site. This national road is very extensive and links to other national roads, including the N18, N1, N12, N18, N10 and the N7, across the country. The road traverses the country in an east-west direction and is the connection between the towns Springbok, Aggeneys, Pofadder, Kakamas, Keimoes, Upington, Olifantshoek, Kathu, Kuruman, Vryburg, Delareyville, Sannieshof, Coligny, Ventersdorp, Krugersdorp and Johannesburg. Other routes that provide access to the site is the regional road (R31) which is located to approximately 1.7km west of the site. Both the N14 and R31 traverses the town of Kuruman. Direct access to the site is possible through the use of an unnamed secondary road which connects to the N14 and is parallel to the western boundary of the site.

4.6 Social Characteristics of the Site and Surrounding Areas

The purpose of the section is to provide an overview of the current socio-economic situation within the proposed study area. This section provides a strategic understanding of the socio-economic profile of the Northern Cape Province, the John Taolo Gaetsewe District Municipality (JTGDM) and the Ga-Segonyana Local Municipality (GSLM), in order to develop a better understanding of the socio-economic performance of the area as a background to the development of the Metals Industrial Cluster.

4.6.1. Regional Context

a. Northern Cape Province

The Northern Cape is the largest province in South Africa, taking up nearly a third of South Africa's land area. The area covers 372 899km², which is 30.5% of South Africa's total area. However, the Northern Cape has the country's smallest population with a little over 1 million people (population 1 145 861), which is 2.2% of South Africa's population, and an extremely low population density of three people per square kilometre. Just over half of the population speak

Afrikaans (53.8%), with other languages being Setswana (33.1%), isiXhosa and English. The capital of the Northern Cape is Kimberley, located on the Province's eastern border. Other important towns are Kuruman, the centre of the karakul sheep and dried fruit industries, and the most northerly wine-making region of South Africa, Springbok, located in the heart of the Namaqualand spring flower country, and De Aar, the hub of the South African railway network.

b. John Taolo Gaetswe District Municipality (JTGDM)

The John Taolo Gaetswe District Municipality (JTGDM; previously Kgalagadi District Municipality) is bordered by i) The Siyanda and Francis Baard District Municipalities to the south and west; ii) The North West Province (Dr. Ruth Segomotsi Mompati District Municipality) to the east and northeast; and iii) Botswana to the north west. Administratively, the JTGDM comprises three Local Municipalities: i) The Gamagara Local Municipality; ii) The Ga-Segonyana Local Municipality; and iii) The Joe Morolong Local Municipality. JTGDM is the second smallest district in the Northern Cape, occupying only 6% of the Province (27 293km²). The JTGDM comprises of 186 towns and settlements of which the majority (80%) are villages in the Joe Morolong Municipality. The JTGDM has an established rail network from Sishen South and between Black Rock and Dibeng. It is characterised by a mixture of land uses, of which agriculture and mining are dominant economic sectors. The district holds potential as a viable tourist destination and has numerous growth opportunities in the industrial sector. The main cities and towns in the JTGDM include: Bankhara-Bodulong, Deben, Hotazel, Kathu, Kuruman, Mothibistad, Olifantshoek, Santoy and Van Zylsrus.

According to the Mineral Beneficiation Cluster Feasibility Study and Business Plan the JTGDM has the following characteristics:

- » The 2nd largest contributor to the province's mining industry.
- » Major minerals mined – manganese, iron ore, tiger's eye and crocidolite.
- » Location of two of South Africa's most important iron ore mining operations – Kumba Sishen and Assmang Beeshoek mines
- » Produces most of the manganese ore in SA especially in Hotazel.
- » Has Jasper and Suglite deposits in Kuruman and Hotazel respectively.

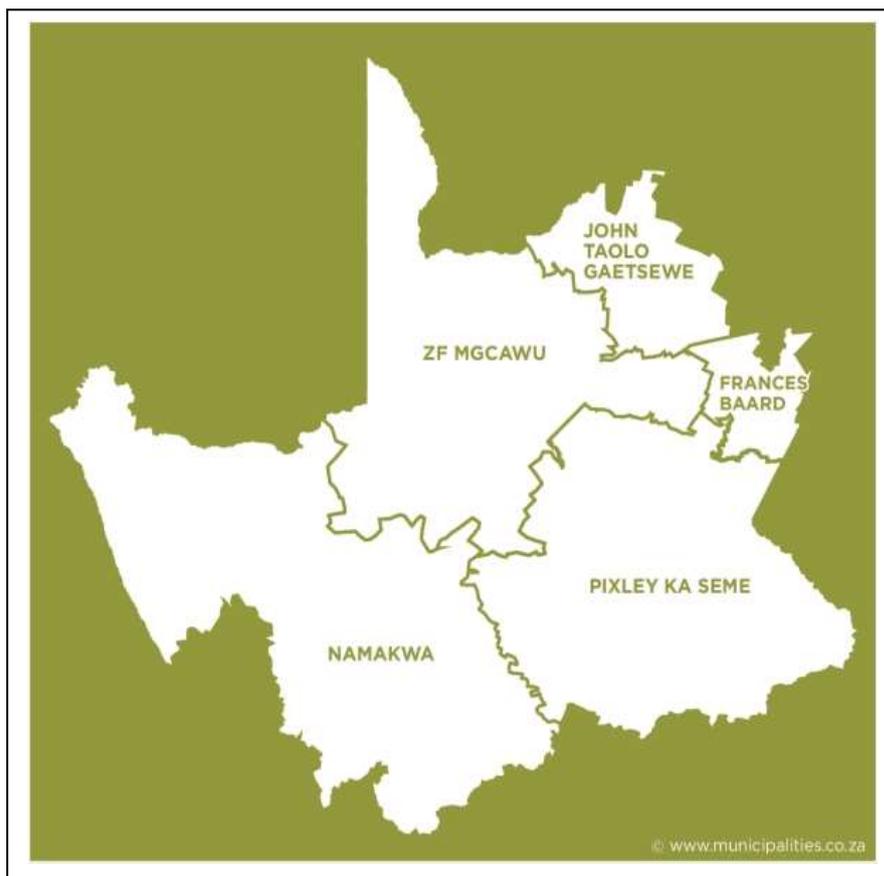


Figure 4.7: Location of the John Taolo Gaetsewe District municipality (JTGDM) in the Northern Cape (Source: Local Government Handbook, 2012).

4.6.2. Local Context

Ga-Segonyana Local Municipality (GSLM)

The GSLM is found within the greater JTGDM (refer to **Figure 4.8** below). The GSLM was established in 2000 through the amalgamation of Kuruman and Mothibstad Municipalities. The municipality consists of 33 residential areas of which 20% is constituted of urban and peri-urban areas and 80% is rural areas. The area is also administered through a traditional authority system with two paramount chiefs and headmen. The municipality covers an area of 4 491km². The CBD of the municipality is situated in the town of Kuruman and residential areas of the municipality are within the 80km with the population estimated at 93 652 (Census, 2011). The municipality is divided into 13 wards with 13 Ward Councillors and 12 Proportional Representative Councillors. Council seating is located in the town of Kuruman and all rural residential areas are administered by Traditional Authorities. These areas do not obtain title deeds because they are not formalised. There are two Paramount Chiefs representing the Batlharo Ba-ga Motlhwane and the Batlhaping Ba-ga Jantjie in the municipal council. This dynamic administration process marks the challenge in the general development

and planning of the municipality. As such the two administrations are claiming to be working together, sprawling development in the rural areas which is not aligned to the municipal development plan. These challenges create a strain on the municipal resource planning and allocation. The dominant economic sectors in the GSLM are mining and agriculture. The main towns include Bankhara-Bodulong, Kuruman and Mothibistad.

Baseline Characteristics of the Ga-Segonyana Local Municipality (GSLM)

General baseline characteristics and challenges of the GSLM are as follows (Census, 2011 & GSLM IDP 2015/2016):

- » The GSLM has a population of ~93 652 which is 29% of the total population of the JTGDM. The GSLM has the largest population size when compared to other local municipalities under JTGDM.
- » It is clear that the trend in the GSLM area is towards a growing population. This is largely attributable to the mining activities in the area. This movement of people is predominantly from the municipal jurisdiction area of the Joe Morolong municipality.
- » Of the ~93 652 population, about 52% are female, while 48% are male.
- » In the GSLM there are approximately ~26 816 households with an average household size of ~3.4 persons per household. Of the ~26 816 households in GSLM approximately 81% live in formal dwellings.
- » Only 24.7% of the total population of GSLM resided in urban areas.
- » Africans constitute more than 87% of the population in the municipal area. Together with the Coloured population, almost 95% of the population of the area could be regarded as historically disadvantaged. This reality must be reflected in the manner in which the municipality plans and prioritise service delivery and economic opportunities.
- » The most spoken language in the GSLM is Tswana (79.2% of the population).
- » The Economically Active Population (EAP) (individuals that are aged 15-64 that are either employed or actively seeking employment) accounts for 63.2% of the entire population. This emphasises the importance of local economic development initiatives to create employment opportunities for jobseekers.
- » The population aged 0–14 years comprise 32.5% of the population and those aged 65 years and above accounts for 4.3% of the entire municipal population.
- » The dependency ratio is the amount of individuals that are below the age of 15 and over the age of 64, that are dependent on the EAP. The dependency ratio in the GSLM comprises 36.8% of the population.
- » There are low levels of literacy amongst the members of the community. The level of education influences growth and economic productivity of a region. In the GSLM 9.7% of the population have no schooling, 23.6% have completed

matric and only 9.9% of the population have higher education. This means that majority of the population have a low-skill level and would need employment in low-skill sectors.

- » Unemployment is rife in the local municipality. The municipality's unemployment rate is high at 33.7%.
- » Households that have either no income or low income fall within the poverty level (R0- R38 200 per annum) accounts for 64.2%. A middle-income is classified as earning between R38 201 - R307 600 per annum. Approximately 31.8% of the households earn a middle income and 4.1% of households earn a high income that is classified as earning R307 601 or more per annum. A high percentage of household income falls within the poverty level. The high poverty level has social consequences such as not being able to pay for basic needs and services.
- » Approximately 80% of the population have access to electricity. Approximately 23.4% of households within the municipality have access to a flush toilet. Approximately 44.2% of the population are using a pit toilet without ventilation. 63.9% of the municipal households have their own refuse dump and 17.6% have their disposal removed by the municipality. Lastly approximately 87.8% of households have access to piped (tap) water. This is further emphasised by the fact that the main development needs in the municipality lies in the rural areas. The service delivery profile of GSLM area is still largely based on traditional patterns of development and under-development, although enormous progress has been made since 1994 to ensure access to basic services to the most vulnerable sections of the population.
- » The economy of the municipality is reliant on the mining, agriculture, tourism and commercial sectors in and around the town of Kuruman. Rapid mining development lead to extreme pressure on resources planning and allocation in that these developments do not allow for thorough assessment of availability of resources like the availability of water, electricity, waste management, sanitation and other municipal services. The GSLM depends on underground water supply for its domestic, agricultural and commercial demand and use.
- » Mining and agriculture remain the core economic activities in the municipal area, and attract a lot of job-seekers. There is a constant increase in the population, which cause severe pressure on infrastructure and the service capacity of the municipality.

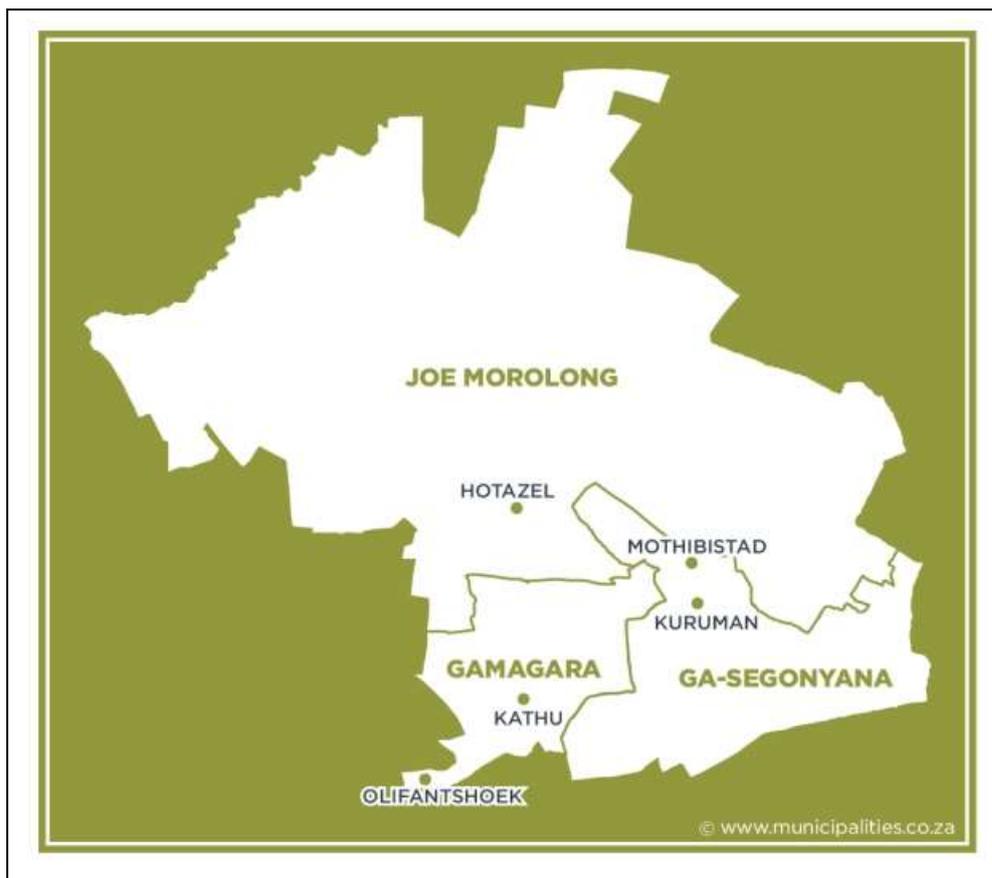


Figure 4.8: Location of the Ga-Segonyana Local Municipality (GSLM) within the John Taolo Gaetsewe District Municipality (Source: Local Government Handbook, 2012).

The greatest social problems in the GSLM are illiteracy, poverty and lack of basic service infrastructure. The income distribution is distorted in the GSLM to the disadvantage of the less economically secured people, who also represents the majority of the municipal area. Poor households are a result of a lack of wage income, either due to unemployment or low-paying jobs. Access to basic services such as electricity, toilets and piped water is also closely correlated with poverty.

4.6.3. Areas of influence

a. Direct areas of influence

The direct areas of influence are the areas or entities that will be directly affected and impacted on by the proposed development of the Metals Industrial Cluster.

The areas or entities that will be directly affected and impacted on from a social perspective will include the following:

- » Major service providers will be affected which includes the local and district municipalities (i.e. the Ga-Segonyana Local Municipality and the John Taolo Gaetsewe District municipality).

- » The local municipality will absorb a number of positive and negative social impacts, specifically relating to an influx of people into the area as this will increase pressure of the municipal service delivery of the area for the people residing in the municipality.
- » Contribution to the social and economic sector's will take place through the enabling of skills development and training which will empower individuals and promote employment creation within the local area.
- » The development of the Metals Industrial Cluster will mainly focus on economic benefits to the area and introduce a new industry into the local economy.
- » There are a number of local businesses in the area that could benefit from the proposed development in terms of an increase in demand for goods and services (positive cumulative impacts).

b. Indirect areas of influence

The indirect areas of influence are the areas or entities that will be indirectly affected and impacted on by the proposed development of the Metals Industrial Cluster.

The areas or entities that will be indirectly affected and impacted on from a social perspective will include the following:

- » A number a stakeholders residing outside of the direct area of influence who may be affected by the proposed development. These stakeholders include road users that use the N14 on a frequent basis as part of their daily or weekly movement patterns. Construction vehicles and trucks may be utilising these roads during the construction phase which will increase the traffic and may increase the wear and tear on of these roads.
- » The proposed development may also have an indirect effect on the town's local residents; with a possible influx of in-migrants and growth in the local economy.

c. Immediate areas of influence

The immediate areas of influence are the areas that are located adjacent to the site as well as the site.

The proposed Metals Industrial Cluster will be located within the whole extent (47ha) of Portion 6253 of Erf 1, which is located ~2km south east from the town of Kuruman. The site proposed for the development is located within the urban edge of Kuruman. Majority of the land surrounding the proposed site comprises large open spaces. Prominent features within or surrounding the proposed site includes:

- » The Kuruman Country Club and Golf Course located approximately 200m south east from the proposed site.
- » The edge of Kuruman is located approximately 250m north west of the proposed site. Kuruman is a town with ~13,057 inhabitants in the Northern Cape Province of South Africa. It is known for its scenic beauty and the town is widely known as the 'the fountain of Christianity' in Africa, or the 'Oasis of the Kalahari', due to the flowing springs of *Die Oog* (the Eye of Kuruman).
- » A proposed development called the Kuruman Technical Training College is planned to be located on the adjacent property to the north of the site.
- » The El Dorado Hotel is a three star hotel located 250m north west of the proposed site.
- » Kuruman is surrounded by a number of mines that is considered as the economic lifeblood of the region.
- » The N14 national road located 300m north of the proposed site.
- » It is unknown at this stage what activities take place on the impacted and adjacent lands.
- » There are also a few dwellings/buildings located near the study area, outside the town of Kuruman.

4.7 Heritage features of the region

4.7.1. Heritage and archaeology

Northern Cape Province has a wealth of heritage sites (Beaumont & Morris 1990; Morris & Beaumont 2004). Archaeological sites include the world renowned Wonderwerk Cave located 42km south of Kuruman, the major Tswana town and the LIA stone-walled settlements at Dithakong located 40km north of Kuruman. Other important sites in the larger area include Tsantsabane, an ancient specularite working site on the eastern side of Postmasburg and Doornfontein, another specularite working site north of Beeshoek. However, studies adjacent to the area under investigation (Tobias & George 2012) and for a quarry to the east of the study area by van der Walt (2012) recorded no archaeological sites, and similarly very few archaeological sites are expected to be recorded in the study area. Where pans or drainage lines occur in the study area, Stone Age artefact scatters might be expected, but are likely to not be of conservation value. None of these features are present on the identified site.

SCOPING OF ISSUES ASSOCIATED WITH THE METALS INDUSTRIAL CLUSTER

CHAPTER 5

This chapter serves to describe and evaluate the identified potential environmental impacts associated with the establishment and operation of the proposed Metals Industrial Cluster near Kuruman. As the Metals Industrial Cluster zones are proposed to be located across the entire extent of the property Portion 6253 of Erf 1, the full extent of the farm has been considered in this Scoping assessment. This has been undertaken with the aim of determining the feasibility of undertaking the development within the site, and identifying areas for further assessment in the EIA phase.

The potential impacts of the establishment of the proposed Metals Industrial Cluster are identified, described and evaluated in this chapter in accordance with the requirements of the EIA Regulations. In accordance with the objectives of the scoping study (as defined in Chapter 3 of this report), this has been informed by a review of existing baseline information and desk-top investigations.

The environmental impacts expected to occur during the establishment of the development include, among others:

- » Impacts on ecology and the natural environment, including impacts to fauna and flora within and around the site and loss of habitat as a result of transformation of the site during site establishment;
- » Impacts on heritage resources, including archaeological resources, within the development footprint as a result of transformation of the site during site establishment;
- » Impacts on the social aspects of the affected communities within and around the study area as a result of the socio-economic benefits and social upliftment as a result of the planned development.

Environmental issues specific to the operation of the development could include, among others:

- » Altered natural runoff patterns due to rainfall interception by impenetrable hard surfaces and the need for stormwater and erosion control measures.
- » Disturbance to or loss of indigenous natural vegetation.

Table 5.1 and **Table 5.2** provide a summary of the findings of the scoping study undertaken for the site establishment and operation phases of the proposed Metals Industrial Cluster respectively. Impacts associated with the decommissioning phase are expected to be similar to those associated with

construction and are therefore not repeated. Impacts of the proposed development are described and evaluated, and recommendations are made regarding further studies required within the EIA phase of the process. **Table 5.3** provides a summary of the potential for cumulative impacts associated with the development of the proposed Metals Industrial Cluster.

5.1 Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required by Appendix 2: Content of the Scoping Report of the EIA Regulations, 2014 (GNR982):

Requirement	Relevant Section
(h)(v) the impacts and risks identified for each alternative, including the nature, significance, consequence, extent, duration and probability of the impacts, including the degree to which these impacts (aa) can be reversed (bb) may cause irreplaceable loss of resources and (cc) can be avoided, managed or mitigated.	The impacts and risks identified for both the construction and operation phases are included within the Table 5.1 and Table 5.2.
(h)(vi) the methodology used in determining and ranking the nature, significance, consequences, extent, duration and probability of potential environmental impacts and risks associated with the alternatives	The methodology used for the assessment of potential impact and risks is detailed in Section 5.2.
(h)(vii) positive and negative impacts that the proposed activity and alternatives will have on the environment and on the community that may be affected focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects	The impacts and risks identified for both the construction and operation phases is included within the Tables 5.1-5.3.
(h)(viii) the possible mitigation measures that could be applied and level of residual risk	Possible mitigation measures and the level of residual risk associated with the impacts is included within the Tables 5.1-5.3.

5.2 Methodology for Impact and Risk Assessment during the Scoping Phase

The following methodology was used to describe and evaluate the main issues and potential risks and impacts associated with the proposed Metal Industrial Cluster during the scoping phase:

- » The identification of potential sensitive environments and receptors that may be impacted on by the proposed development and the types of impacts (i.e. direct, indirect and cumulative²) that are most likely to occur. This was achieved through a review of existing baseline information and desk-top investigations to define sensitivities.
- » Description of the nature, significance, consequence, extent, duration and probability of potential impacts, as well as the degree to which these impacts are reversible, may cause irreplaceable loss of resources and can be avoided, managed or mitigated during the site establishment and operation phases.
- » The identification of potential risks to the development and the environment, and identification of 'No-Go' areas within the broader site, where applicable.
- » The compilation of a summary of the potential impacts that will be considered further in the EIA Phase through specialist assessments.

5.3 Assumptions made during the Evaluation of Potential Impacts

While evaluating potential impacts associated with the development of the Metals Industrial Cluster, it was assumed that the development footprint of the Cluster (i.e. the 47ha extent of the available farm portion) will include the footprints of all associated infrastructure. During the site establishment phase, the entire extent of the developable area required for the proposed Cluster could suffer some level of disturbance. This is referred to as the development footprint.

² A cumulative impact refers to the past, current and reasonably foreseeable future impact of an activity, considered together with the impact of activities associated with that activity that in itself may not be significant, but may become significant when added to the existing and reasonably foreseeable impacts eventuating from similar or diverse activities (Environmental Impact Assessment Regulations, 2014).

Table 5.1: Evaluation of potential impacts associated with the site establishment of the Metals Industrial Cluster

Impacts on Ecology (Flora, Fauna, Ecosystems, Soil and Water Resources)

Expected impacts of the proposed development will be mostly associated with the transformation of the site, and the resulting clearance of vegetation, loss of vegetation or habitat and impacts to the supporting substrate. Loss of habitat and transformation may also impact on small mammals and invertebrates. A scoping level ecological sensitivity map has been included as **Figure 5.1** below.

Impacts on vegetation and protected plant species

The most likely impact associated with the development will be on vegetation as a result of transformation of the site. The proposed development will require site clearance, and lead to a direct loss of vegetation. Consequences of the impact occurring may include:

- » general loss of habitat for sensitive species;
- » reduction in biodiversity;
- » increased potential for fragmentation (depending on the location of the impact);
- » disturbance to processes maintaining biodiversity and ecosystem goods and services; and
- » a loss of ecosystem goods and services.

Several protected and red data species occur within the Half and Quarter Degree Grid Squares (2723A and 2723AD) which includes the site. There is a potential for these species as well as species protected within the relevant provincial and national legislations to occur within the site. Plant species are especially vulnerable to infrastructure development due to the fact that they cannot move out of the path of the construction activities and are also affected by an overall loss of habitat. Threatened species (red data species) include those listed as critically endangered, endangered or vulnerable. For any other species a loss of individuals or localised populations is unlikely to lead to a change in the conservation status of the species. However, in the case of threatened plant species, loss of a population or individuals could lead to a direct change in the conservation status of the species and possible extinction. This may arise if the proposed infrastructure is located where it will impact on such individuals or populations. Consequences may include:

- » fragmentation of populations of the affected species;
- » reduction in the area of occupancy of the affected species; and
- » a loss of genetic variation within the affected species.

These may all lead to a negative change in the conservation status of the affected species, which implies a reduction in the chances of the species' overall survival.

The entire study area and immediate surroundings are covered by a single vegetation type, namely Kuruman Thornveld. Kuruman Thornveld is classified as a Least Threatened ecosystem. This vegetation type has a distribution throughout the Northern Cape and North West Province. The largest portion of this vegetation type is still in a natural and/or near-natural state, with only 2% transformed. Due to the size of the planned development, and given the

extensive amount of potentially intact vegetation in the broader area, there is likely to be little overall disruption to the broad-scale connectivity of the landscape. Impacts can be largely mitigated and maintained at a local scale, these impacts and the significance of these impacts can be regarded as low.

Direct Faunal impacts

Faunal species will primarily be affected by transformation and an overall loss of habitat. Increased levels of noise, pollution, disturbance and human presence will have a negative impact on fauna. Sensitive and shy fauna will move away from the area during the construction phase as a result of the noise and human activities present, while some slow-moving species and species confined and dependant on specified habitats would not be able to avoid the construction activities and might be killed during the construction period. Some mammals and reptiles would be vulnerable to illegal collection or poaching during the site establishment phase as a result of the large number of construction personnel that are likely to be present.

Threatened species (red data species) include those listed as critically endangered, endangered or vulnerable. For any other species a loss of individuals or localised populations is unlikely to lead to a change in the conservation status of the species. However, in the case of threatened faunal species, loss of a population or individuals could lead to a direct change in the conservation status of the species and possible extinction. This may arise if the proposed infrastructure is located where it will impact on such individual or populations. Consequences may include:

- fragmentation of populations of affected species;
- reduction in the area of occupancy of the affected species; and
- a loss of genetic variation within the affected species.

These may all lead to a negative change in the conservation status of the affected species, which implies a reduction in the chances of the species' overall survival.

Disturbance of faunal species can be maintained to a minimum and low significance by implementing effective mitigation measures such as the relocation of affected fauna and avoidance of habitats.

Impacts on ephemeral streams and drainage lines

No ephemeral streams or drainage line habitats occur within the proposed site. Indirect impacts on these habitats surrounding the area are expected to be unlikely during site establishment. Impacts are therefore expected to be unlikely and of low significance.

Soil erosion and associated degradation of ecosystems

Soil erosion is a frequent risk associated with development on account of the vegetation clearing and disturbance and may continue to occur throughout the operation phase. The vegetation clearance during site establishment will result in an increase in runoff during intense rainfall events and may exaggerate the effects of erosion. With effective mitigation measures in place, including implementation of an appropriate stormwater management plan,

as well as regular monitoring of the occurrence, spread and potential cumulative effects of erosion may be limited to an absolute minimum.

Alien Plant Invasions

Major factors contributing to invasion by alien invader plants includes habitat disturbance and associated destruction of indigenous vegetation. Consequences of this may include:

- » further loss and displacement of indigenous vegetation, even outside of the development footprint;
- » change in vegetation structure leading to change in various habitat characteristics;
- » change in plant species composition;
- » change in soil chemistry properties; and
- » change in the flammability of vegetation, depending on alien species.

Although the potential severity of this impact may be high, it can be easily mitigated through regular alien control. Impacts are therefore expected to be of low significance with appropriate mitigation.

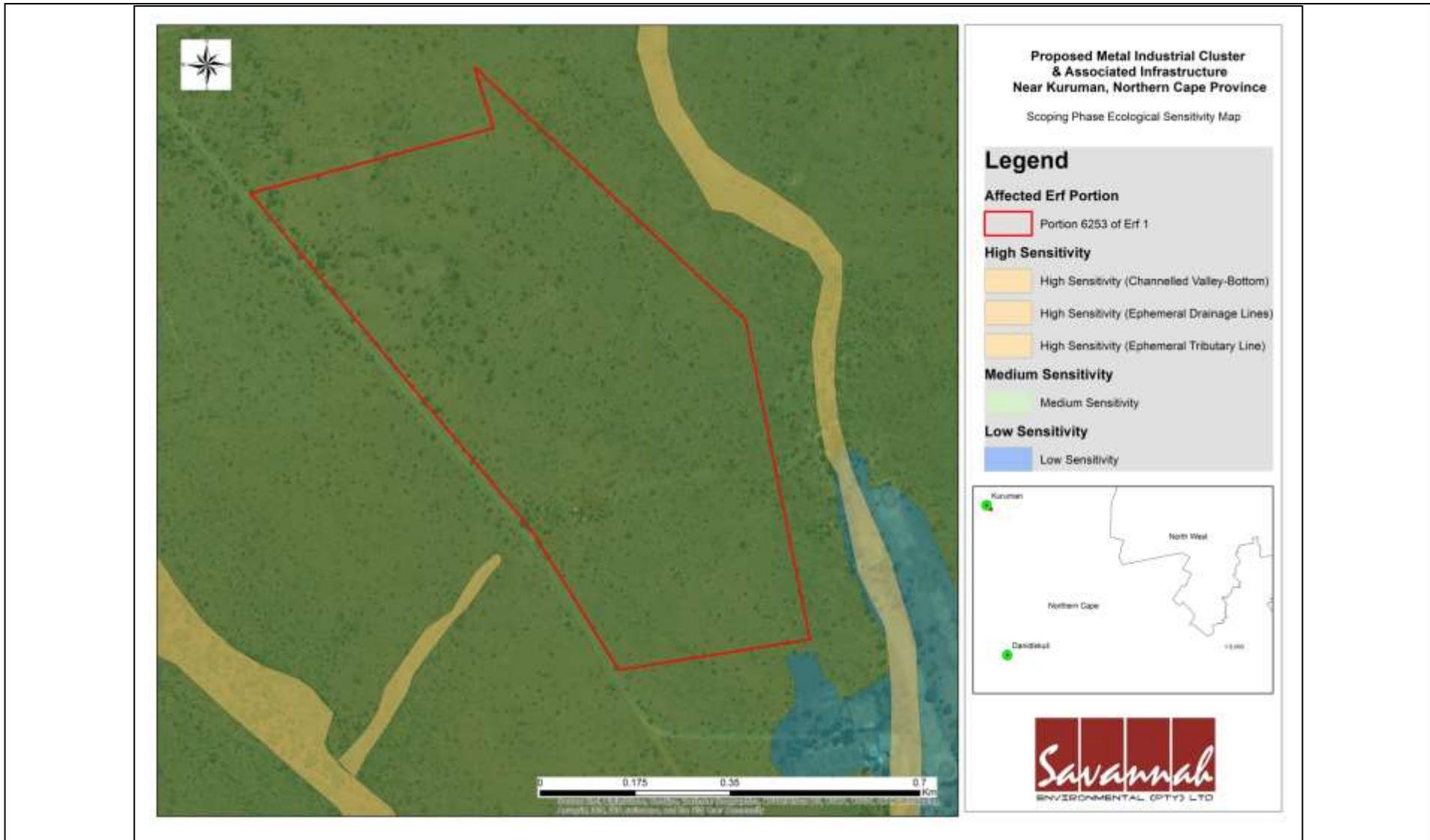


Figure 5.1: Ecological sensitivity map of the site proposed for the Metals Industrial Cluster (based on desktop information).

The ecological sensitivity of the different units identified in the mapping procedure was rated according to the following scale:

- » **Low** – Areas have been transformed to the point where no natural habitat remains.
- » **Medium-Low** – Areas have been disturbed and degraded, specifically the disturbance of indigenous natural vegetation
- » **Medium** - Areas are characterised by indigenous or natural vegetation, with areas of disturbance of indigenous natural vegetation and one or two features that make them of biodiversity value, but not to the extent that they would be classified into one of the other higher categories.
- » **Medium-High** - Areas are natural vegetation in which there are one or two features that make them of biodiversity value, but not to the extent that they would be classified into one of the other two higher categories.
- » **High** – Areas are of high biodiversity value, but do not necessarily contain features that would put them into the VERY HIGH class. The class also includes any areas that are not specifically identified as having high conservation status but, have high local species richness, unique species composition, low resilience or provide very important inclusion into this class, if there were no other factors that would put them into the highest class.
- » **Very High** – Areas are vital for the survival of species or ecosystems. They are either known sites for threatened species or are ecosystems that have been identified as being remaining areas of vegetation of critical conservation importance. CBA1 areas would qualify for inclusion into this class, depending on their condition as confirmed through field investigations.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Disturbance to and loss of indigenous natural vegetation.	Site establishment will result in transformation of the site, and lead to direct loss of vegetation. Consequences of clearing and loss of indigenous natural vegetation may include: <ul style="list-style-type: none"> » Increased vulnerability of the remaining vegetation to future disturbance, including extreme climatic events; » General loss of habitat for sensitive fauna and flora species; » General reduction in biodiversity; » Increased fragmentation (depending on the location of the impact) and associated reduced viability of species populations; » Alteration of the habitats suitable for plant populations by altering the surface structure. This will change species composition and associated species interactions; » Disturbance to processes maintaining biodiversity and ecosystem goods and services; and » A loss of ecosystem goods and services. 	Local	No No-Go areas have been identified to date. This must be verified during a detailed investigation as part of the EIA phase.

<p>Disturbance or loss of threatened / protected plants.</p>	<p>Several red-data plant species could potentially occur in the study area. Flora is affected by overall loss or alteration of habitat and due to its limited ability to extend or change its distribution range.</p> <p>In the case of threatened plant species, a loss of a population or individuals could lead to a direct change in the conservation status of the species and possibly extinction. This may arise if the proposed infrastructure is located where it will impact on such individuals or populations. Consequences of this may include:</p> <ul style="list-style-type: none"> » Fragmentation and decline of populations of the affected species; » Reduction in the area of occupancy of affected species; » Loss of genetic variation within the affected species; » Alteration of the habitat suitable for plant associations through altering of the surface structure. This will change the species composition and associated species interactions and the species ability to persist; » Future extinction debt of particular species of flora and fauna. <p>These may all lead to a negative change in conservation status of the affected species, which implies a reduction in the chance of survival of the species.</p>	<p>Local</p>	<p>No No-Go areas have been identified to date. Several red-data species have the potential to occur within the study area; in order for the occurrence and location/s to be confirmed further investigation will take place in the EIA phase.</p>
<p>Loss of protected trees.</p>	<p>According to the National Forests Act, no person may cut, disturb, damage or destroy any listed protected tree species. At this stage, it is expected that the presence of protected trees within this site will be low, with only <i>Boscia albitrunca</i>, and <i>Acacia erioloba</i> potentially occurring with the study area. Their presence and density needs to be confirmed during the EIA field study.</p>	<p>Local - site</p>	<p>No No-Go areas have been identified to date.</p>
<p>Loss of habitat for fauna species of conservation concern.</p>	<p>Fauna species of conservation concern may be indirectly affected by a loss of or alteration of habitat and associated resources. Animals are mobile and, in most cases, can move away from a potential threat, unless they are bound to a specific habitat that is also</p>	<p>Local</p>	<p>No No-Go areas have been identified to date.</p>

	<p>spatially limited and will be negatively impacted by a development. Nevertheless, the proposed development will reduce the extent of habitat available to fauna.</p> <p>For any species, a loss of individuals or localised populations is unlikely to lead to a change in the conservation status of the species.</p> <p>There are a number of red data species that have been recorded for the wider area within which the study area is located. Their presence and the necessity to keep their habitats intact in the study area need to be confirmed during a field survey.</p>		
<p>Impacts on ephemeral drainage lines.</p>	<p>NFEPA Maps along with available Google imagery show that two ephemeral streams are located outside of the development footprint, but in relatively close proximity to the site.</p> <p>Indirect impacts on these systems may include the following:</p> <ul style="list-style-type: none"> » The nature of the site preparation and construction activities for the proposed development will change the surface characteristics, rainfall interception patterns and runoff characteristics of the area; » This may affect the geohydrology, susceptibility to erosion and potential erosion rates of the landscape, which may extend and lead to an alteration to or loss of habitat for fauna and flora species, especially those that depend on riparian and wetland habitats surrounding the site. <p>A decline in ecosystem functionality of riparian areas of smaller drainage lines will impact lower-lying larger drainage lines and wetlands, while also reducing the ability of the environment to buffer effects of extreme climatic events.</p>	<p>Local</p>	<p>As none of these habitat types could be identified within the study area, no No-Go areas have been identified to date. This must however be verified during a detailed investigation as part of the EIA phase.</p>
<p>Establishment and spread of declared weeds and alien</p>	<p>Major factors contributing to invasion by alien invader plants include excessive disturbance to vegetation, creating a window of opportunity for the establishment of alien invasive species. The</p>	<p>Local</p>	<p>No No-Go areas have been identified to date.</p>

<p>invader plants.</p>	<p>potential for alien invasive species to be present in or around the study area is regarded as high. A high number of alien invasive species have been recorded in the wider area according to the SANBI database. The extent to which the site already contains alien plants will be determined in the EIA phase.</p> <p>Consequences of the establishment and spread of invasive plants include:</p> <ul style="list-style-type: none"> » Loss of indigenous vegetation; » Change in vegetation structure leading to change in or loss of various habitat characteristics; » Change in plant species composition; » Change in flammability of vegetation, depending on alien species; » Hydrological impacts due to increased transpiration and runoff. 		
<p>Summary of the nature, significance, consequence, extent, duration and probability of the impacts</p> <ul style="list-style-type: none"> » The area is generally homogenous and given the extensive amount of potentially intact vegetation in the area, there is likely to be little overall disruption to the broad-scale connectivity of the landscape (to be confirmed during the EIA phase). » The extent of the local impact on protected and listed plants or tree species may be regarded as significant due to the nature of the development which will entail the clearance of the whole site, leading to a localised loss of habitat. The extent, nature and subsequently the significance of this impact can be reduced with the implementation of mitigation measures, including a vegetation rehabilitation plan, a plan for search and rescue of protected and listed plants prior to site establishment, and avoidance where possible. Furthermore, due to the extent and availability of habitat surrounding the proposed site, this localised impact will most likely not have a significant impact on the greater area of occupancy of affected species as well as a loss of genetic variation. Therefore, the significance regarding a potential change in status and/or the overall survival of the species can be regarded as low and unlikely. » Some habitat loss for faunal species is an inevitable consequence of the development but is not likely to be of broader significance (to be confirmed during EIA phase). Direct faunal disturbance would be greatest during the site establishment phase. » As the study area is located within a slightly north-east sloping landscape, sloping towards the drainage system (ephemeral drainage lines) located to the east of the study area, there is a slight likelihood for some impacts such as an increase in surface runoff into the drainage system and the spread of erosion into the system. However, the possibility and extent of these impacts are still regarded as low and with the necessary monitoring and mitigation measures in place, these impacts on the ephemeral drainage line can be avoided. 			

- » With mitigation measures, including regular monitoring, effective eradication and management methods in place the significance of impacts associated with invasive alien plants is expected to be low and local to the site.

Gaps in knowledge & recommendations for further study

- » The initial desk-top investigation of the study area indicates that a few protected and red-data species have the potential to occur on the site. However, once the Cluster layout has been designed in line with the findings of a field investigation, the likelihood that the development will compromise the survival of any species of conservation concern is expected to be limited.
- » Plant species of conservation concern will be most readily identifiable during the growing season, and therefore the field survey of vegetation is best to be undertaken between mid-January and end-April.

Impacts on Heritage Resources (Archaeological resources)

Archaeology

The Northern Cape Province has an abundance of valuable heritage sites. These sites include i) the world renowned Wonderwerk Cave located 42km south of Kuruman, ii) the major Tswana town and iii) the Late Iron Age stone-walled settlements at Dithakong located 40km north of Kuruman. Other important sites in the broader area include Tsantsabane, an ancient specularite working site on the eastern side of Postmasburg and Doornfontein and another specularite working site north of Beeshoek. Although the Province has an abundance of archaeological sites, no recordings or discoveries have been made to date within the site proposed for the development of the Metals Industrial Cluster and the surrounding areas, therefore very few archaeological sites are expected in the study area. A literature search on previous heritage studies conducted in close proximity to the site (i.e. south west of the site) recorded very sparse Middle Stone Age artefacts scattered over the landscape. Approximately 12km to the west of the site a study by van der Walt (2012) recorded no sites of significance, and these findings are similar to a study by Tobias & George (2012) that was conducted adjacent to the current study area on Erf 5529 located to the north of the site.

An area of interest within the site has been noted on Google Earth. This area of interest contains structures, although it has been deduced that the structures were erected after 2006 and before 2010. Graves are often associated with structures as mentioned above (this will have to be ground truthed during the EIA phase).

The heritage scoping study revealed that the following heritage sites, features and objects can be expected within the broader study area and the site.

Archaeological finds

Studies undertaken adjacent and in the surrounding areas of the site recorded no archaeological sites, similarly very few archaeological sites are expected

to occur within the project site proposed for the development of the Metals Industrial Cluster. Pans or drainage lines might be areas of significance in terms of the presence of Stone Age artefact scatters (this will be confirmed during the EIA phase).

The construction phase could directly impact on surface and subsurface archaeological site. The development could have a low impact on a local scale on archaeological artefacts.

Historical finds

Historical finds include middens, structural remains and cultural landscapes. The site has been fallow for a number of years with no agricultural activities occurring on the property. It is assumed that the property was used for grazing activities in the past and features dating to this period associated with grazing can occur but is doubtful to be older than 60 years.

The development can directly impact on both the visual context and sense of place of historical sites. The extent of the impact in terms of the construction of the development could have a low impact on a local scale on historical finds.

Burials and Cemeteries

Graves and informal cemeteries can be expected to occur anywhere on the landscape. Graves are often associated with structures like the structures identified in the area of interest (this will have to be verified in the EIA phase).

Site establishment for the proposed development could directly impact on marked and unmarked graves. The extent of the impact is expected to be low (to medium should a grave site be identified) on a local scale.

The following impacts on heritage resources can be expected:

- » Direct impacts to heritage resources including damage and destruction of the sites;
- » Indirect impacts including impacts on the cultural landscape and sense of place of the area;
- » Cumulative impacts including the permanent destruction of heritage resources throughout the wider region due to various developments in the broader area.

Issue	Nature of Impact	Extent of Impact	No-Go Areas
Disturbance and destruction of archaeological sites and graves.	Construction activities could cause irreversible damage or destroy heritage resources.	Local	No no-go areas have been identified to date. This will be confirmed in the EIA phase through detailed field survey.

Summary of the nature, significance, consequence, extent, duration and probability of the impact

The significance of sites and mitigation and significance of possible impacts can only be determined after the field work has been conducted in the EIA phase, but based on previous work that has been conducted in the area Middle Stone Age artefact scatters of low significance and grave sites are considered the most likely heritage features to be identified. It is possible to mitigate impacts to heritage sites by micro adjustments to site layouts in order to preserve any identified sites. Alternatively, grave sites can be relocated and stone age sites can be test excavated and mapped if warranted. All these mitigation measures will require adherence to the NHRA and the required permits from SAHRA.

Gaps in knowledge & recommendations for further study:

The site has not been subjected to a cultural resource survey and it is assumed that information obtained for the wider region is applicable. A field survey will be conducted in the EIA phase to confirm the presence of heritage resources after which mitigation will be recommended.

Social Impacts

The construction of the Metals Industrial Cluster will have both positive and negative impacts on the socio-economic environment of the surrounding areas:

The potential positive impacts which could arise as a result of the site establishment activities include the following:

- » Socio-economic benefits could accrue through job creation (primarily lower skilled levels) during the establishment phase. The local community could therefore benefit in this regard;
- » It is anticipated that more skilled positions could be filled by individuals from around South Africa;
- » Should employment be linked to training and capacity building it would further the positives in this regard;
- » Local procurement would be focused on the procurement of general construction materials, goods and services.

People from the Ga-Segonyana Local Municipality and nearby towns/settlements are most likely going to benefit the most from these positive impacts.

The potential negative impacts which could arise as a result of the construction activities include the following:

- » An increase in the number of vehicles utilising the N14, local gravel roads and internal access roads for the duration of the construction phase for the proposed development. Construction vehicles utilising these roads over the construction period, with heavy construction vehicles, could increase the wear and tear on the roads utilised, national roads, secondary roads and internal access roads; also crossing over the roads to access the site could increase the risk of accidents;
- » An influx of workers and jobseekers to the area (whether locals are employed or outsiders are employed) could increase the safety risks in the local

<p>area and have an impact on the local social dynamics. Should locals be employed it could minimise the perceived and actual risk in this regard;</p> <ul style="list-style-type: none"> » An influx of an outside workforce could put pressure on municipal services. Therefore introducing an external workforce to the local area will put pressure on local services and the local community. This would, however, also depend on the exact size of the workforce. » Adjacent landowners could be negatively affected by impacts from dust, noise or negative aesthetics created as a result of the construction activities. 			
Positive impacts			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Direct employment opportunities and skills development	The creation of employment opportunities and skills development opportunities during the construction phase for the country and the local economy.	Local-regional	None
Economic multiplier effects	Significance of the impact from the economic multiplier effects from the use of local goods and services.	Local-regional	None
Negative impacts			
Safety and security impacts	<p>Temporary increase in safety and security concerns associated with the influx of people in the study area during the construction phase.</p> <p>Areas of concern in terms of safety and security include the impacted farmland and adjacent areas.</p>	Local	No no-go areas have been identified to date.
Impacts on daily living and movement patterns	<p>Temporary increase in traffic disruptions due to heavy vehicles could create short-term disruptions and safety hazards for current road users which could impact the local community's movement patterns and increase safety risks for road users.</p> <p>The development may impact the local community members that currently utilise the N14 or the surfaced unamend secondary road on a regular basis.</p>	Local	None
Pressure on economic and social infrastructure impacts from an in-migration of people	Added pressure on economic and social infrastructure during construction phase as a result of in-migration of people	Local	None

Nuisance impacts (noise and dust)	Nuisance impacts in terms of temporary increase in noise and dust, on site, in adjacent areas and on access roads.	Local	None
<p>Summary of the nature, significance, consequence, extent, duration and probability of the impact</p>			
<p><i>Positive impacts:</i> The potential impacts are expected to be positive, probable, short term, with a low-minor intensity and have a low - medium significance. This will be confirmed during the EIA phase following detailed investigation and assessment of impacts. The potential impact may be enhanced with possible enhancement measures which will be elaborated in the SIA EIA phase.</p> <p><i>Negative impacts:</i></p> <ul style="list-style-type: none"> » <i>Safety and security impacts:</i> The potential impact is expected to be negative, improbable, short term, with a low intensity and have a low significance. » <i>Impacts on daily living and movement patterns:</i> The potential impact is expected to be negative, probable, short term, with a moderate intensity and have a low significance. » <i>Pressure on economic and social infrastructure impacts from an in-migration of people:</i> The potential impact is expected to be negative, improbable, short term, with a low intensity and have a low significance. » <i>Nuisance impacts (noise and dust):</i> The potential impact is expected to be negative, probable, short term, with a moderate intensity and have a low significance. <p>The potential negative impacts can be reversed and there are no irreplaceable loss of resources associated with the potential impacts. The potential impacts may be mitigated with possible mitigation measures which will be elaborated in the SIA EIA phase.</p>			
<p>Gaps in knowledge & recommendations for further study</p>			
<ul style="list-style-type: none"> » It is recommended that a detailed SIA is undertaken to determine the actual impact of job creation and skills development. » It is recommended that the impact of economic multiplier effects is further assessed in the EIA phase of the SIA. 			

Table 5.2: Evaluation of potential impacts associated with the operation of the Metals Industrial Cluster

<u>Impacts on Ecology (Flora, Fauna, Ecosystems, Soil and Water Resources)</u>			
<p>Operation related activities which could impact on the fauna, flora and overall ecology of the site includes:</p> <ul style="list-style-type: none"> » Maintenance (trimming / removal) of surrounding vegetation as part of management of the facility. » Presence of ancillary infrastructure associated with the Cluster. » Presence of impermeable surfaces associated with the built environment. <p>The following impacts are identified as the major potential impacts that are likely to be associated with the operation of the proposed Metals Industrial Cluster and which will be assessed further during the EIA phase.</p> <ul style="list-style-type: none"> » Altered runoff patterns due to rainfall interception by impenetrable hard surfaces and compacted areas. » Disturbance to migration routes and associated impacts to species populations. » Impacts on ephemeral streams and drainage lines. » Establishment and spread of declared weeds and alien invader plants. 			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Altered runoff patterns due to rainfall interception by impenetrable hard surfaces and compacted areas.	<p>Impenetrable, hard and compacted areas create large surfaces of rainfall interception, where rainfall is collected and concentrated at the edges from where it then moves onto the ground in larger, concentrated quantities as opposed to small drops being directly intercepted and raindrop impact dispersed by vegetation, then absorbed by the ground. This may lead to a localised increase in runoff during rainfall events, which may result in localised accelerated erosion.</p> <p>Likewise, access roads and areas where soils have been compacted will have a low rainfall infiltration rate, and therefore creating more localised runoff from those surfaces. This runoff will be required to be monitored and controlled and deviated</p>	Site and surroundings	No No-Go areas have been identified to date. This must be verified during a detailed investigation as part of the EIA phase

	where necessary to prevent erosion.		
Disturbance to migration routes and associated impacts to species populations.	<p>All components of the proposed development may interfere with current migration routes of especially fauna species. This may lead to:</p> <ul style="list-style-type: none"> » Reduced ability of species to move between breeding and foraging grounds, reducing breeding success rates; » Increased mortality rates due to fatal collisions with infrastructure; 	Site and surroundings	No No-Go areas have been identified to date. This must be verified during a detailed investigation as part of the EIA phase
Impacts on ephemeral streams and drainage lines.	<p>NFEPA Maps along with available Google imagery show that no ephemeral water bodies are located on the site. However, two ephemeral streams are located to the west and east of the site. Indirect impacts on these systems may include the following:</p> <ul style="list-style-type: none"> » The nature of the operation activities will change surface characteristics, rainfall interception patterns and runoff characteristics of the area; » This may affect the geohydrology, susceptibility to erosion and potential erosion rates of the landscape; 	Local to regional	As none of these habitat types could be identified within the study area, no No-Go areas have been identified.
Establishment and spread of declared weeds and alien invader plants.	<p>The envisaged altered vegetation cover after construction and during the operation phase of the proposed development will create a window of opportunity for the establishment of alien invasive species. The potential for alien invasive species to be present in or around the study area is regarded as high. A high number of alien invasive species have been recorded in the wider area according to the SANBI database. The extent to which the site already contains alien plants will be determined in the EIA phase. Consequences of the establishment and spread of invasive plants include:</p> <ul style="list-style-type: none"> » Loss of indigenous vegetation or change in vegetation structure leading to an even more significant change in or loss of various habitat characteristics; » Loss of plant resources available to fauna; 	Local	No No-Go areas have been identified to date.

	<ul style="list-style-type: none"> » Change in soil chemical properties; » Change in the flammability of the vegetation, depending on the alien species; » Hydrological impacts due to increased transpiration and runoff; 		
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Summary of the nature, significance, consequence, extent, duration and probability of the impacts

- » With effective mitigation measures in place, including implementation of an appropriate stormwater management plan, as well as regular monitoring, potential effects of erosion may be limited to an absolute minimum.
- » From the desktop survey, no important faunal migratory routes (usually along extensive and well wooded valley floors and ephemeral streams) appear to be present (to be confirmed during the EIA phase).
- » As the study area is located within a slightly north-east sloping landscape, sloping towards the drainage system located to the east of the study area, there is a slight likelihood for some impacts such as an increase in surface runoff into the drainage system (ephemeral streams and drainage lines) and the spread of erosion into the system. However, the possibility and extent of these impacts are still regarded as low and with the necessary monitoring and mitigation measures in place, these impacts can be avoided.
- » With mitigation measures including, regular monitoring, effective eradication and management methods in place the significance of impacts associated with invasive alien plants is expected to be low and local to the site.

Gaps in knowledge & recommendations for further study

- » Limited knowledge exists on the potential and ease with which vegetation can be re-established after site establishment as a result of the variable rainfall regime of the region; unknown species persistence in the altered environment on and around the proposed site; and what effect this altered species composition and –density will have on ecosystem intactness and functionality.
- » Regular monitoring of a minimum set of environmental parameters throughout the operation phase, coupled with an adaptive environmental management program, will be required to prevent any environmental degradation.

Social Impacts

The operation of the Metals Industrial Cluster will have both positive and negative impacts on the socio-economic environment of the surrounding areas:

The potential positive impacts which could arise as a result of the operation phase include the following:

- » Assist in driving industrial development in the Northern Cape Province.
- » Employment opportunities would be created resulting in benefits to unemployed individuals within the local communities.
- » Capacity building and skills development throughout the life of the development could be to the benefit of the employees and could assist them in obtaining transferable skills.
- » Local procurement for general materials, goods and services (e.g. transport, catering and security) and other spin-off benefits such as an increase in the demand for housing.
- » The presence of permanent security personnel at the development could be beneficial to the overall security measures implemented in the area.

The potential negative impacts which could arise as a result of the operation phase include the following:

- » Change to the daily living and movement patterns for road users of the main access road, whereby an increase in traffic and heavy vehicles could have a negative impact.
- » Dependant on the tenants within the Cluster, nuisance impacts such as dust, noise and air emissions could impact adjacent landowners and/or communities. This would be assessed on a tenant-specific level when each seeks its own environmental permits.
- » Potential impact on tourism activities, although unlikely to be significant.

Positive impacts			
Issue	Nature of Impact	Extent of Impact	No-Go Areas
Direct employment opportunities and skills development.	<p>The operation phase (20 years or longer) will require a workforce and therefore direct long term employment opportunities will be generated. Training and skills development opportunities will be provided for employees during the operation phase.</p> <p>The local community members as well as others within the Northern Cape will benefit from this positive social impact and will provide numerous socio-economic opportunities for the local area.</p>	Local-regional	None

Economic multiplier effects.	There are likely to be opportunities for local businesses to provide services and materials for the operation phase of the development. The local service sector will also benefit. In terms of business opportunities for local companies, expenditure during the operation phase will create business opportunities for the regional and local economy. Also the injection of income into the area in the form of wages will represent an opportunity for the local economy and businesses in the area. There will be a significant impact from the economic multiplier effects from the use of local goods and services.	Local-regional	None
Negative impacts			
Impacts on daily living and movement patterns.	<p>Increase in traffic disruptions impacting local communities movement patterns and increased safety risks for road users.</p> <p>The development may impact local community members that currently utilise the N14 or the unnamed secondary surfaced road on a regular basis.</p>	Local	None
Nuisance impacts (noise, air emissions and dust).	<p>Nuisance impacts in terms of an increase in noise, air emissions and dust, on site, in adjacent areas and on access roads.</p> <p>The proposed site is located within the urban edge and near the existing Kuruman Industrial park, therefore the potential nuisance impacts will most likely have a low significance.</p>	Local	None
Impacts on Tourism.	Impacts associated with the proposed development on local tourism in the area. However, the proposed development is located within the urban edge of Kuruman and near the existing Kuruman Industrial park. Therefore, it is unlikely that the proposed development will have an impact on these tourism activities due to the location of the proposed site and the nature of the surrounding areas.	Local	None

	Potential sensitive receptors include the town of Kuruman, the Kuruman Country Club and the El Dorado Hotel.		
<p>Summary of the nature, significance, consequence, extent, duration and probability of the impacts</p> <p><i>Positive Impacts:</i></p> <ul style="list-style-type: none"> » <i>Direct employment opportunities and skills development:</i> The potential impact is expected to be positive, probable, long term, with a minor intensity and have a medium significance. » <i>Economic multiplier effects:</i> The potential impact is expected to be positive, probable, long term, with a minor intensity and have a low-medium significance. In terms of reversibility of the impact and irreplaceable loss of resources, this is not applicable to this type of impact. <p>The potential positive impacts may be enhanced with possible enhancement measures which will be elaborated on in the SIA EIA phase.</p> <p><i>Negative Impacts:</i></p> <ul style="list-style-type: none"> » <i>Impacts on daily living and movement patterns</i> - The potential impact is expected to be negative, probable, long term, with a moderate intensity and have a low significance. The potential impact can be reversed and there is no irreplaceable loss of resources associated with the potential impact. » <i>Nuisance Impacts</i> - The potential impact is expected to be negative, probable, long term, with a moderate intensity and have a low significance. » <i>Impacts on Tourism</i> - The potential impact is expected to be negative, probable, long term, with a low intensity and have a low significance. The potential impact can be reversed and there are no irreplaceable loss of resources associated with the potential impact. <p>The potential negative impacts may be mitigated with possible mitigation measures which will be elaborated on in the SIA EIA phase.</p>			
<p>Gaps in knowledge & recommendations for further study</p> <ul style="list-style-type: none"> » A detailed SIA is undertaken to determine the actual impact of job creation and skills development opportunities and economic multiplier effects during the operation phase. » Consultations with key stakeholders will need to take place in the EIA phase in order to determine the impact on daily living and movement patterns during the operation phase. » A site visit and consultations with key stakeholders (impacted and adjacent landowners) will need to take place in the EIA phase in order to determine the extent of nuisance impacts for the duration of the operation phase. 			

Table 5.3: Evaluation of potential cumulative impacts associated with the development of the Metals Industrial Cluster

Approach to Cumulative Effects Assessment

Cumulative impacts, in relation to an activity, refer to the impact of an activity that in-itself may not be significant but may become significant when added to the existing and potential impacts eventuating from similar or diverse activities or undertakings in the area. For cumulative effects analysis to help the decision-maker and inform interested parties, it must be limited to effects that can be evaluated meaningfully (DEAT, 2004). Boundaries must be set so analysts are not attempted to measure effects on everything. Therefore, the cumulative impacts associated with the proposed Metals Industrial Cluster have been viewed from two perspectives within this report:

- » Cumulative impacts associated with the location and nature of the project i.e. a Metals Industrial Cluster located approximately 2km south east from the town of Kuruman on Portion 6253 of Erf 1;
- » Cumulative impacts associated with other relevant approved or existing and proposed developments within the surrounding area of the proposed Metals Industrial Cluster project site.

Cumulative effects are commonly understood as the impacts which combine from different projects and which result in significant change, which is larger than the sum of all the impacts (DEAT, 2004). The complicating factor is that the projects that need to be considered are from past, present and reasonably foreseeable future development. Cumulative effects can be characterised according to the pathway they follow. One pathway could be the persistent additions from one process. Another pathway could be the compounding effect from one or more processes. Cumulative effects can therefore occur when impacts are:

- * additive (incremental);
- * interactive;
- * sequential; or
- * synergistic.

Canter and Sadler (1997) describe a three step process for addressing cumulative effects in an EIA:

- * delineating potential sources of cumulative change (i.e. GIS to map the relevant renewable energy facilities in close proximity to one another).
- * identifying the pathways of possible change (direct impacts)
- * indirect, non-linear or synergistic processes; and
- * Classification of resultant cumulative changes.

The Metals Industrial Cluster is proposed to be located on Portion 6253 of Erf 1, ~2km south east from the town of Kuruman. The location of the site

falls within the urban edge of the town of Kuruman, in the Northern Cape Province.

The site and the greater Kuruman area has been identified by the Northern Cape Provincial Development and Resource Management Plan/Provincial Spatial Development Framework (PSDF) of 2012 as an area of focus for the development of industrial areas (i.e. Spatial Plan Category (SPC) E - industrial area). As the area is earmarked for the development of industrial industries, as identified above, it can be expected that various industrial developments will take place. The closest existing industrial development located near the site proposed for the Custer is the Kuruman Industrial park. This industrial park is located approximately 2.2km west of the site.

From a cumulative perspective there is no unacceptable risk or loss associated with the development of the Metals Industrial Cluster in the proposed location. This is supported by the fact that the site is located within the urban edge of the town of Kuruman and can therefore be considered as a site which would have been developed for some type of industry or entity. It is also considered unlikely that the site would have been used for agricultural purposes as it is located within the urban edge. The Northern Cape Spatial Development Framework (PSDF) also includes and supports the undertaking of the Cluster within the proposed site and, as such, considers that a development of this nature would not lead to unacceptable loss or risk.

Changes to the environment and sense of place within the location of the site are expected to occur but are not considered to be significant as a result of the site being located within the urban edge, an area which would have undergone development in any case. The only parties who might be impacted by the physical presence of the Metals Industrial Cluster is the Kuruman Country Club, located south of the proposed site, and the El Dorado Hotel, located north of the proposed site.

The cumulative impacts associated with the development of the Metals Industrial Cluster are considered to be acceptable in terms of the loss and risk associated with the development. The overall impact that the development will have on the site and the surrounding areas are considered to be acceptable in terms of the location of the development which indicates that there will not be a significant increase in impacts with the development of the Metals Industrial Cluster.

Summary of the nature, significance, consequence, extent, duration and probability of cumulative impacts

- » The positive cumulative impacts include creation of employment, skills development and training opportunities, and downstream business opportunities. Benefits to the local, regional and national economy through employment and procurement of services could be substantial. People from the Ga-Segonyana Local Municipality and nearby towns are most likely going to benefit from job opportunities and economic benefits. These positive cumulative impacts will be of a medium significance.

- » The potential negative cumulative impacts are considered to be probable, although the extent, duration, and magnitude of these impacts can be minimised to levels where this impact can be regarded as low significance through implementation of appropriate mitigation measures.
- » The duration of the project is expected to be long-term and subsequently the impact is also expected to be long-term.
- » The impact associated with the proposed development is expected to be local, affecting mainly the immediate environment and the surrounding areas. Positive impacts including job creation and economic development are considered to be regional in extent.

Gaps in knowledge & recommendations for further study:

- » Each specialist study will consider and assess the cumulative impacts of proposed, approved and authorised renewable projects in the area.
- » Cumulative impacts will be fully assessed in the EIA phase.

CONCLUSIONS

CHAPTER 6

The Northern Cape Department of Economic Development and Tourism propose the establishment of a Metals Industrial Cluster on Portion 6253 of Erf 1 located ~2km south east from the town of Kuruman. The proposed site is located within the urban edge of Kuruman and falls under the jurisdiction of the Ga-Segonyana Local Municipality and within the greater John Taolo Gaetsewe District Municipality in the Northern Cape Province. The Cluster is planned to be an industrial park anchored around steel and metals manufacturing while allowing for other related industries to be located and operate within the Cluster.

This Scoping Report is aimed at detailing the nature and extent of the Metals Industrial Cluster, identifying potential issues associated with the development and defining the extent of studies required within the EIA phase. This was achieved through an evaluation of the proposed Metals Industrial Cluster, involving the project proponent, specialist consultants, and a consultation process with key stakeholders (including relevant government authorities) and interested and affected parties (I&APs). The public consultation process is extensive and every effort is being made to include representatives of all stakeholder groupings in the study area and the Province. This chapter concludes the Scoping Report and provides an evaluation of the identified potential environmental risks and impacts associated with the establishment and operation phases of the Cluster. Recommendations regarding investigations required to be undertaken within the EIA are provided within the Plan of Study for EIA, contained within Chapter 7 of this scoping report.

The conclusions and recommendations of this scoping report are the result of the review of existing information and desk-top evaluations of impacts identified by specialists with the aim of identifying the potential for risks and sensitivities on the proposed development site and thereby flagging any areas which are not considered acceptable for a development of this nature.

6.1 Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required in terms of Appendix 2: Content of the Scoping Report of the EIA Regulations, 2014:

Requirement	Relevant Section
(h)(xi) a concluding statement indicating the preferred alternatives, including the preferred location of the activity.	A concluding statement regarding the Metals Industrial Cluster is included within this chapter as a whole.

6.2 Project Overview

The Metals Industrial Cluster is expected to be developed and transition through four phases as follows: i) Phase 1 which is considered to be short term; ii) Phase 2 which is considered to be medium term; iii) Phase 3 which is considered to be long term; and iv) Phase 4 which is intended to cater to the expansion of the Cluster beyond a 20-year timeframe planned for the 3 phases.

The Cluster will consist predominantly of Small, Medium and Micro-sized Enterprises (SMME) and Small and Medium Enterprises (SME) companies with an increasing number of larger firms over time. These enterprises could possibly be of a light, medium or heavy industrial nature. The Cluster will be driven by a Cluster Management Company (CMC). Incentives will be offered to Cluster Member Firms (CMFs) and will include shared infrastructure, facilities and services, as well as access to funding. Shared infrastructure which will be established as part of the site establishment of the Cluster will include a common boundary fence, a security checkpoint, and utility connection points and roads infrastructure within the Cluster.

The Cluster will include basic infrastructure that will be required for the operation of the development. The basic infrastructure to be constructed includes:

- » Buildings (warehousing, administrative buildings, skills development centre, student accommodation etc.);
- » Access roads including main access to the Cluster and internal access roads;
- » Landscaping;
- » Parking and administrative buildings;
- » Fencing;
- » Infrastructure relating to bulk services including electricity, water, sewage and waste water; and
- » Security.

Any entity or company (CMF) planning to be located within the Metals Industrial Cluster will be required to make provision for the specific infrastructure that would be required for the operation of the specific entity and would require the undertaking of its own permits and authorisations in terms of the legal requirements.

The main reasons for the authorisation for the establishment of the proposed Metals Industrial Cluster, as per the listed activities triggered in the EIA Regulations of 2014, is a change in the land-use of the site and the removal of vegetation within the site.

6.3 Conclusions drawn from the Evaluation of the Proposed Development of the Metals Industrial Cluster

The establishment of the Metals Industrial Cluster forms part of a drive for industrial and economic development and growth within the Northern Cape Province. This drive towards growth in the Province is as a result of historical high volume mining activity taking place without the corresponding rise in manufacturing and the associated long-term economic and social benefits.

The overarching objective of the Metals Industrial Cluster is to diversify economic activities and encourage development in the Northern Cape Province while maximising metals related production through the development of a cluster with competitive but complimentary industries. From a regional perspective, the greater Kuruman area is considered favourable for the development of an industrial development of this nature by virtue of the need and desirability for industrial development and economic growth. The greater Kuruman area has also been earmarked for industrial development as specified in the Northern Cape PSDF. This contributes to the suitability of the location in the sense that the area is considered as a location where increased industrial development will take place.

From a site perspective the location of the site is deemed appropriated by the Northern Cape Department of Economic Development and Tourism for the development of the Metals Industrial Cluster. The location of the site falls within the urban edge, and in close proximity to already-established facilities and industrial areas, this has led to the development of the Cluster across the full extent of Portion 6253 of Erf 1 being considered as in-fill development. The site is owned by the Ga-Segonyana Local Municipality, and as such is earmarked for development in the short-term. Certain characteristics in and around the site contribute to the suitability of the location for the planned development, and these include accessibility to the site, social considerations within the town of Kuruman including the need for economic growth and a reduction in unemployment, accessibility and availability of bulk services required by the development, and proximity to areas which have also been developed for industrial use. The closest existing industrial development in the vicinity of the site is the Kuruman Industrial Park, located approximately 2.2km west of the site. Currently the site has no formal land use and is associated with communal and uncontrolled grazing activities, therefore the development of the Metals Industrial Cluster within the proposed site will not see the loss of any type of on-going formal land-use, and will be complimentary to those land uses in close proximity of the site.

Through the undertaking of the scoping study specialist input was provided in order to delineate areas of potential sensitivity that need to be avoided by the development of the Metals Industrial Cluster. These specialist studies (undertaken on a desktop level) consider the impact of the development on the ecological, archaeological and social

features within and around the site within the site establishment and operation phases of the proposed development. A Scoping Phase Environmental Sensitivity Map illustrating mapped sensitive environmental features is included as **Figure 6.1**.

From the ecology study the following conclusions can be made. The development of the Metals Industrial Cluster will not have a significant impact on the site due to the fact that no ecologically sensitive habits occur within the site. The vegetation unit present across the full extent of the site is Kuruman Thornveld, which is classified as a Least Threatened ecosystem. This vegetation type has a distribution throughout the Northern Cape and North West Province. The largest portion of this vegetation type is still in a natural and/or near-natural state, with only 2% transformed. No wetlands or drainage lines have been identified within the site, however two ephemeral streams are located outside of the development footprint, but in relatively close proximity to the site. Ecological impacts associated with the establishment phase of the development includes the disturbance of vegetation (including plants and trees), and loss of habitat. Ecological impacts associated with the operation phase of the development includes changes to the runoff patterns (owing to stormwater management and discharge), an increase in erosion potential, impacts on drainage lines located outside of the site, and the potential for alien plant invasion.

Given the extensive amount of potentially intact vegetation in the area, there is likely to be little overall disruption to the broad-scale connectivity of the landscape (to be confirmed during the EIA phase). With mitigation measures, including regular monitoring, effective eradication and management methods in place the ecological impacts associated with the development of the Metals Industrial Cluster can be managed and reduced to an acceptable level.

From the archaeological study undertaken, one potential area of interest has been identified within the site. This area of interest contains structures and could potentially be a dwelling, however it was deduced that the structures were erected after 2006 and before 2010. Graves are often associated with structures as mentioned above, however the presence of graves in the area will have to be ground-truthed during the EIA phase. Archaeological resources will only be impacted on in the establishment phase when excavation and ground works take place, and no impacts will occur during the operation phase.

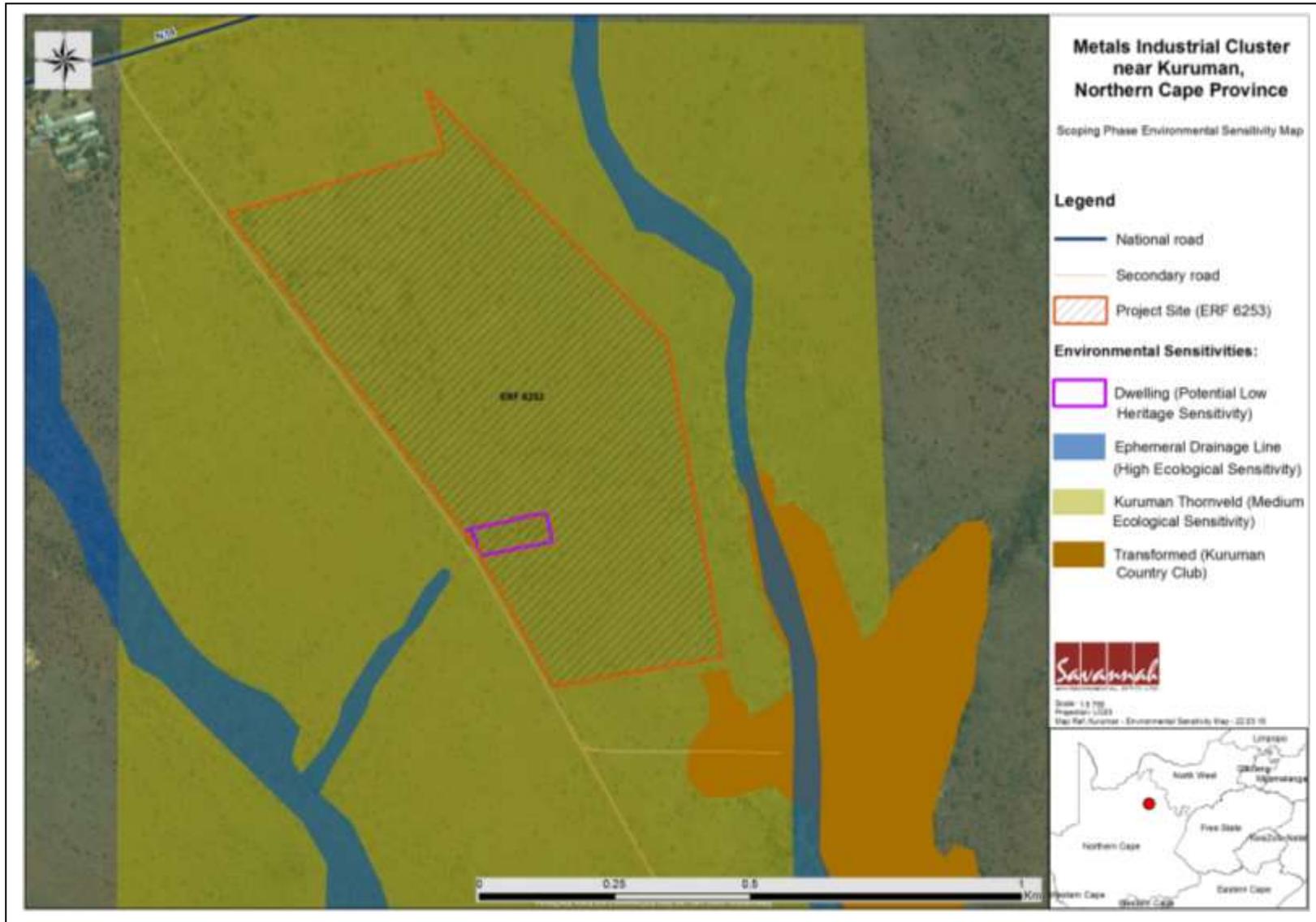


Figure 6.1: Environmental Sensitivity Map from the results of the scoping evaluation for the Metals Industrial Cluster located near Kuruman in the Northern Cape Province.

From the social study undertaken the following conclusions can be made. The socio-economic spinoffs and growth as a result of the establishment and operation of the Metals Industrial Cluster will be the most significant positive impact associated with the development. The social positive impacts stretch beyond just the proposed site and the town of Kuruman. Opportunities relating to economic development and growth and skills development will be attracted to the greater Kuruman area where there is a need and desirability for development to take place. This will be utilised as a tool for the reduction of social issues within the area, which mainly relate to unemployment.

There are positive and negative social impacts associated with the establishment phase and the operation phase respectively. Positive impacts throughout the establishment and operation of the Metals Industrial Cluster includes the creation of employment opportunities and skills development opportunities, economic multiplier effects and local procurement. The development will also assist in driving industrial development in the Northern Cape Province. Negative impacts throughout the establishment and operation of the Metals Industrial Cluster includes safety and security impacts, impacts on daily living and movement patterns, an in-migration of people and nuisance impacts. Although there are negative social impacts associated with the development it must be taken into account that the site is located within the urban edge of the town of Kuruman, therefore the negative impacts are not considered to be new within the area as it is a built-up environment with its own challenge and existing developments.

Overall the development will create benefits for the surrounding communities which will improve the standard of living without having a detrimental effect on the environment and the features located within. It can therefore be concluded that an industrial development of this nature will be appropriate and suitable from a regional and site perspective and should be considered as a significant opportunity as a whole.

6.4 Recommendations

From the findings of the scoping study, there are no environmental fatal flaws associated with the Metals Industrial Cluster proposed to be located within Portion 6253 of Erf 1. It is however recommended that the general layout of the Metals Industrial Cluster consider the full extent of the site proposed for the development in terms of the nature of possible entities and companies (i.e. light, medium or heavy industries) that may be established within the site.

With an understanding of the areas within the proposed site the Northern Cape Department of Economic Development and Tourism can prepare the general layout for consideration within the EIA Phase. During the EIA phase more detailed environmental studies will be conducted in line with the Plan of Study

contained in Chapter 7 of this report. These studies will consider the general layout produced by the Department and make recommendations for the implementation of avoidance strategies (if required), mitigation and management measures to ensure that the final assessed general layout retains an acceptable environmental impact.

**PLAN OF STUDY FOR THE
 ENVIRONMENTAL IMPACT ASSESSMENT**

CHAPTER 7

This Scoping Report includes a description of the nature and extent associated with the development of the proposed Metals Industrial Cluster with details regarding the Scoping Phase, as well as the issues identified, described and evaluated. This chapter provides the Plan of Study for the Environmental Impact Assessment (EIA) which is relevant to the development phase for the Cluster, based on the outcomes of the Scoping Study and associated specialist investigations. The key findings of the Scoping Phase includes inputs from authorities, the public, the proponent and the EIA specialist team, and are used to inform the Plan of Study for EIA together with the requirements of the NEMA EIA Regulations of 2014 and applicable guidelines. The Plan of Study describes how the EIA Phase will proceed and includes details of the detailed specialist studies required to be undertaken for those potential impacts recorded to be of potential significance.

The Northern Cape Department of Economic Development and Tourism is proposing the development of a Metals Industrial Cluster within the whole extent of Portion 6253 of ERF 1.

7.1 Legal Requirements as per the EIA Regulations for the undertaking of a Scoping Report, 2014

This chapter of the scoping report includes the following information required in terms of Appendix 2: Content of the Scoping Report of the EIA Regulations, 2014:

Requirement	Relevant Section
(i) a plan of study for undertaking the environmental impact assessment process to be undertaken	A plan of study for the undertaking of the EIA phase for the Metals Industrial Cluster is included within this chapter as a whole.

7.2 Aims of the EIA Phase

The EIA Phase to be undertaken for the Cluster will aim to achieve the following:

- » Provide an overall description and assessment of the social and biophysical environment affected by the development of the proposed Cluster.
- » Assess potentially significant impacts (direct, indirect and cumulative, where required) associated with the proposed Cluster.
- » Identify and recommend appropriate mitigation measures for potentially significant environmental impacts.

- » Undertake a fully inclusive public involvement process to ensure that I&APs are afforded the opportunity to participate, and that their issues and concerns are recorded.

The EIA will address potential environmental impacts and benefits (direct, indirect and cumulative impacts) associated with each phase of the development including design, construction, operation and decommissioning; and will aim to provide the environmental authorities with sufficient information to make an informed decision regarding the proposed project. All feasible alternatives (including the 'do nothing' alternative) will be assessed.

7.3 Authority Consultation

Consultation with the regulating authority (i.e. Northern Cape Department of Environment and Nature Conservation (DENC)) will be undertaken and will continue throughout the EIA process. On-going consultation will include the following:

- » Submission of a Final Scoping Report following the 30-day review period (and consideration of comments received).
- » Submission of an EIA Report for review and comment.
- » Submission of a Final EIA Report following a 30-day review period.
- » Consultation and a site visit with DENC (if required) in order to discuss the findings and conclusions of the EIA Report.

7.4 Consideration of Alternatives

The following project alternatives will be investigated in the EIA Phase:

- » **The 'do nothing' alternative:** The Northern Cape Department of Economic Development and Tourism does not establish the proposed Metals Industrial cluster on Portion 6253 of ERF 1.
- » **Site-specific layout/design alternatives:** In terms of the location of different types of industrial entities who could be locating within the Cluster a general layout indicating zones (i.e. light, medium or heavy industrial zones) for specific developments will be designed in accordance sensitivities within the site.

7.5 Assessment of Potential Impacts and Recommendations regarding Mitigation Measures

A summary of the issues which require further investigation within the EIA phase, as well as the proposed activities to be undertaken in order to assess and ground-truth the significance of these potential impacts is provided within **Table 7.1**. The specialists involved in the EIA Phase are also reflected within this table. These specialist studies will consider the general layout proposed for the Cluster, as well as feasible and reasonable alternatives identified for the project.

Table 7.1: Issues requiring further investigation during the EIA Phase and activities to be undertaken in order to assess the significance of these potential impacts relevant to the Metals Industrial Cluster.

Issue	Activities to be undertaken in order to assess significance of impacts	Specialist
<p>Ecology (Flora, Fauna, Ecosystems, Soil and Water Resources)</p>	<p><i>Sensitivity Analysis and EIA assessment</i></p> <p>The scoping study was based on a desktop assessment of existing information and data. The current knowledge is sufficient to proceed to the EIA stage and fieldwork is required to provide accurate insight into the area and to ground-truth the impacts and sensitivities identified within this scoping phase. The ecological specialist study to be undertaken in the EIA phase will include:</p> <ul style="list-style-type: none"> » A site visit to the proposed site to ground-truth and confirm the potential for sensitive habitats and the overall sensitivity of the site, and to gain a better and in-depth understanding of the area in terms of all ecological features present within the site (including fauna and flora). The optimum timing for the field survey is in the growing season between mid-January and end-April, but is also dependant on temperatures and rainfall experienced within the season. » During the site visit the different habitats, landscape units and vegetation features observed within the area will be identified and mapped onto satellite imagery of the site, and species lists of the plant species present within the different habitats identified will be drawn up. The presence and density of threatened and protected plant species will also be noted. » Active searches for reptiles and amphibians will also be conducted within habitats likely to harbour or be important for such species. The presence of sensitive habitats such as wetlands or pans and unique edaphic environments such as rocky outcrops or quartz patches will be noted in the field if present and recorded on a GPS and mapped onto satellite imagery of the site. <p><i>Assessment of Impacts for the EIA</i></p> <p>This methodology described above assists in the evaluation of the overall effect of a proposed activity on the environment. It includes an assessment of the significant direct, indirect, and cumulative impacts. The significance of environmental impacts is to be assessed by means of the criteria of extent (scale), duration, magnitude (severity), probability (certainty) and direction (negative, neutral or positive).</p> <p>The nature of the impact will be defined and described, and refers to the causes of the effect, what</p>	<p>Enviro-Niche Consulting</p>

Issue	Activities to be undertaken in order to assess significance of impacts	Specialist
	<p>will be affected and how it will be affected.</p> <p>For each anticipated impact, recommendations will be made for desirable mitigation measures.</p> <p>Environmental Management Programme For each overarching anticipated impact, management recommendations for the design, construction, and operational phase will be drafted for inclusion in the project EMPr.</p>	
<p>Heritage: Archaeology</p>	<p>Sensitivity Analysis and EIA assessment</p> <p>The specialist study to be undertaken in the EIA phase will include:</p> <ul style="list-style-type: none"> » In order to comply with the National Heritage Resources Act (Act 25 of 1999), a Phase 1 Archaeological Impact Assessment must be undertaken. » During this study sites of archaeological, historical significance or places of cultural interest must be located, identified, recorded, photographed and described. » The levels of significance of the recorded heritage resources must be determined and mitigation must be proposed should any significant sites be impacted upon, ensuring that all the requirements of SAHRA are met. <p>Assessment of Impacts for the EIA This methodology described above assists in the evaluation of the overall effect of a proposed activity on the environment. It includes an assessment of the significant direct, indirect, and cumulative impacts. The significance of environmental impacts is to be assessed by means of the criteria of extent (scale), duration, magnitude (severity), probability (certainty) and direction (negative, neutral or positive).</p> <p>The nature of the impact will be defined and described, and refers to the causes of the effect, what will be affected and how it will be affected.</p> <p>For each anticipated impact, recommendations will be made for desirable mitigation measures.</p> <p>Environmental Management Programme For each overarching anticipated impact, management recommendations for the design,</p>	<p>Jaco van der Walt of Heritage Contract and Archaeological Consulting</p>

Issue	Activities to be undertaken in order to assess significance of impacts	Specialist
	<p>construction, and operational phase will be drafted for inclusion in the project EMPr.</p>	
<p>Social</p>	<p><i>Sensitivity Analysis and EIA assessment</i></p> <p>The main aim for the Social Impact Assessment (SIA) to be conducted during the EIA phase, will be to determine the social impacts that may arise from the proposed development. The key objectives in the SIA process will include:</p> <ul style="list-style-type: none"> » Describing and obtaining an understanding of the proposed development (type, scale, location), the communities likely to be affected and determining the need and scope of the SIA; » Collecting baseline data on the current social environment and historical social trends; » Identifying and collecting data on the Social Impact Assessment variables and social change processes related to the proposed intervention. This requires consultation with affected individuals and communities; » Assessing and documenting the significance of social impacts associated with the proposed project; » Assessing the project (including any feasible alternatives) and identifying potential mitigation and enhancement measures; » Developing an Environmental Management Programme. <p><i>The collection of data</i></p> <p>Primary and secondary data sources will be utilised to inform the study in aid of the objectives of the study. Primary data sources for the SIA will include the following:</p> <ul style="list-style-type: none"> » A site visit will be undertaken. Observations will also be made while on site and within the study area. » Meetings will be undertaken to collect information from representatives of key stakeholder groups. These included individuals both directly and indirectly associated with the proposed development. The meetings will mostly be undertaken face-to-face and where not possible telephonically. A project specific questionnaire will be developed and utilized for the semi-structured interviews. These meetings will form the basis of the primary data collection and 	<p>Candice Hunter of Savannah Environmental (with external review by Neville Bews of Neville Bews and Associates)</p>

Issue	Activities to be undertaken in order to assess significance of impacts	Specialist
	<p>assisted with the gathering of baseline information as well as establishing the stakeholder’s perceptions, interests and concerns on the proposed development.</p> <p>Secondary data collection methods mostly centred on desktop study will be gathered and analysed for the purpose of the study, in which the following documents will be examined:</p> <ul style="list-style-type: none"> » Project maps and plans. » The background information document (BID); » The 2011 South African Census Survey and the Local Government Handbook; » Planning documentation such as District Municipality (DM) Integrated Development Plans (IDPs), Spatial Development Framework (SDF) and Environmental Management Framework (EMF) as well as the Local Municipality (LM) IDPs and policies; » Relevant guidelines, policies and plan frameworks » Other similar specialist studies and relevant information where there have been cross-cutting issues, such as the EIAs undertaken for similar developments in South Africa; » Literature reviews of social issues associated with industrial developments. <p>Information that is relevant to the project will be identified and assessed from these sources within the context of the establishment, operational and decommissioning phases of the proposed Cluster.</p> <p>Assessment of Impacts for the EIA</p> <p>This methodology described above assists in the evaluation of the overall effect of a proposed activity on the environment. It includes an assessment of the significant direct, indirect, and cumulative impacts. The significance of environmental impacts is to be assessed by means of the criteria of extent (scale), duration, magnitude (severity), probability (certainty) and direction (negative, neutral or positive).</p> <p>The nature of the impact will be defined and described, and refers to the causes of the effect, what will be affected and how it will be affected.</p> <p>For each anticipated impact, recommendations will be made for desirable mitigation measures.</p>	

Issue	Activities to be undertaken in order to assess significance of impacts	Specialist
	<i>Environmental Management Programme</i> For each overarching anticipated impact, management recommendations for the design, construction, and operational phase will be drafted for inclusion in the project EMPr.	

7.6 Methodology for the Assessment of Potential Impacts

Direct, indirect and cumulative impacts of the above issues, as well as all other issues identified will be assessed in terms of the following criteria:

- » The **nature**, which shall include a description of what causes the effect, what will be affected and how it will be affected.
- » The **extent**, wherein it will be indicated whether the impact will be local (limited to the immediate area or site of development) or regional:
 - * Local extending only as far as the development site area – assigned a score of 1;
 - * Limited to the site and its immediate surroundings (up to 10 km) – assigned a score of 2;
 - * Will have an impact on the region – assigned a score of 3;
 - * Will have an impact on a national scale – assigned a score of 4; or
 - * Will have an impact across international borders – assigned a score of 5.
- » The **duration**, wherein it will be indicated whether:
 - * The lifetime of the impact will be of a very short duration (0–1 years) – assigned a score of 1;
 - * The lifetime of the impact will be of a short duration (2-5 years) - assigned a score of 2;
 - * Medium-term (5–15 years) – assigned a score of 3;
 - * Long term (> 15 years) - assigned a score of 4; or
 - * Permanent - assigned a score of 5.
- » The **magnitude**, quantified on a scale from 0-10, where a score is assigned:
 - * 0 is small and will have no effect on the environment;
 - * 2 is minor and will not result in an impact on processes;
 - * 4 is low and will cause a slight impact on processes;
 - * 6 is moderate and will result in processes continuing but in a modified way;
 - * 8 is high (processes are altered to the extent that they temporarily cease); and
 - * 10 is very high and results in complete destruction of patterns and permanent cessation of processes.
- » The **probability of occurrence**, which shall describe the likelihood of the impact actually occurring. Probability will be estimated on a scale, and a score assigned:
 - * Assigned a score of 1–5, where 1 is very improbable (probably will not happen);
 - * Assigned a score of 2 is improbable (some possibility, but low likelihood);
 - * Assigned a score of 3 is probable (distinct possibility);
 - * Assigned a score of 4 is highly probable (most likely); and
 - * Assigned a score of 5 is definite (impact will occur regardless of any prevention measures).
- » The **significance**, which shall be determined through a synthesis of the characteristics described above (refer formula below) and can be assessed as low, medium or high.
- » The **status**, which will be described as *either positive, negative or neutral*.

- » The degree to which the impact can be *reversed*.
- » The degree to which the impact may cause *irreplaceable loss of resources*.
- » The degree to which the impact can be *mitigated*.

The **significance** is determined by combining the criteria in the following formula:

S= (E+D+M) P; where

S = Significance weighting

E = Extent

D = Duration

M = Magnitude

P = Probability

The **significance weightings** for each potential impact are as follows:

- » < 30 points: Low (i.e. where this impact would not have a direct influence on the decision to develop in the area),
- » 30-60 points: Medium (i.e. where the impact could influence the decision to develop in the area unless it is effectively mitigated),
- » > 60 points: High (i.e. where the impact must have an influence on the decision process to develop in the area).

As the applicant has the responsibility to avoid and/or minimise impacts as well as plan for their management (in terms of the EIA Regulations), the mitigation of significant impacts will be discussed. Assessment of mitigated impacts will demonstrate the effectiveness of the proposed mitigation measures.

The results of the impact assessment studies and other available information will be integrated by the Savannah Environmental project team. The EIA Report will be compiled, and will include:

- » The details and expertise of the **EAP** who prepared the report.
- » The **location** of the activity and a locality map illustrating the location of the proposed activity.
- » A **description** of the scope of the proposed activity including all listed activities triggered and a description of associated structures and infrastructure.
- » The **policy and legislative** context within which the development is located and an explanation of how the development complies and responds to the legislation and policy context.
- » The **need and desirability** of the proposed development of the activity in the context of the preferred location.
- » A motivation for the **preferred general layout** within the site.

- » A description of the **process** followed to reach the proposed general layout within the site, including:
 - * details of the industrial zones (i.e. light, medium, heavy) considered within the site;
 - * details of the public participation process undertaken in terms of Regulation 41 of the 2014 EIA Regulations, including copies of supporting documents;
 - * a summary of issues raised by interested and affected parties and the manner in which the issues were incorporated;
 - * the environmental attributes associated with the general layout focusing on the geographical, physical, biological, social, economic, heritage and cultural aspects;
 - * the impacts and risks identified including the nature, significance, consequence extent, duration and probability of the impacts, including the degree to which these impacts can be reversed, may cause irreplaceable loss of resources and can be avoided, managed or mitigated;
 - * the methodology used for determining and ranking the nature, significance, consequence, extent, duration and probability of potential environmental impacts and risks;
 - * positive and negative impacts that the activity and alternatives will have on the environment and the community;
 - * possible mitigation measures to be applied and the level of residual risk;
 - * a motivation for not considering alternative development locations (if applicable);
 - * a concluding statement indicating the preferred general layout; and
 - * a full description of the process followed to identify, assess and rank impacts of the activity and associated infrastructure on the site including all environmental issues and risks that have been identified and an assessment of the significance of each issue and risk and the extent to which the issue/risk can be avoided or mitigated.
- » An **assessment** of the identified potentially significant impacts and risks.
- » A summary of the **findings and recommendations** of any specialist report and an indication as to how these findings and recommendations have been included.
- » An **environmental impact assessment** containing a summary of key findings, an environmental sensitivity map and a summary of the positive and negative impacts and risks of the proposed activity.
- » **Recommendations** from specialists.
- » The recording of proposed impact management **objectives** and the impact management **outcomes** for inclusion in the **EMPr** as well as inclusion as conditions of authorisation.
- » Any aspects which were **conditional** to the findings of the assessment.
- » A description of the assumptions, uncertainties and gaps in knowledge relating to the assessment and mitigation measures proposed.
- » An **opinion** as to whether the proposed activity should or should not be authorised and the conditions thereof.
- » An undertaking under **affirmation** by the EAP in relation to the correctness of the information, the inclusion of comments and inputs from stakeholders and Interested

and affected parties, the inclusion of inputs and recommendations from the specialists and any information provided by the EAP to interested and affected parties and any responses by the EAP to comments or inputs made by interested or affected parties.

- » Any specific information that may be required by the competent authority.

The EIA Report will be released to the public and relevant stakeholders, Organs of State and Authorities for a 30-day review period. The comments received from I&APs will be captured within a Comments and Response Report, which will be included within the Final EIA Report, for submission to the Competent Authority (i.e. DENC) for decision-making.

7.7 Public Participation Process

A public participation process will be undertaken by Savannah Environmental during the EIA phase and consultation with key stakeholders and I&APs will be on-going throughout the process. Through this consultation process, stakeholders and I&APs will be encouraged to verify that their issues were recorded in the Scoping Phase and to identify additional issues of concern or highlight positive aspects of the Metals Industrial Cluster, and to comment on the findings of the EIA Phase. In order to accommodate the varying needs of stakeholders and I&APs within the study area, as well as capture their inputs, various opportunities will be provided for stakeholders and I&APs to be involved in the EIA Phase of the process, as follows:

- » Focus group or public meetings (pre-arranged and I&APs invited to attend).
- » One-on-one consultation meetings (for example with directly affected and surrounding landowners).
- » Telephonic consultation sessions (consultation with various parties from the EIA project team, including the public participation consultant, lead EIA consultant as well as specialist consultants).
- » Written, faxed or e-mail correspondence.

The EIA Report will be made available for a 30-day review period prior to finalisation and submission to the Northern Cape Department of Environment and Nature Conservation (DENC) for decision-making. In order to provide an overview of the findings of the EIA process and facilitate comments, a public meeting may be held during this public review period, depending on the specific needs of the stakeholders in the area.

7.8 Key Milestones of the Programme for the EIA

The envisaged key milestones of the programme for the EIA Phase are outlined in the following table (and include indicative dates):

Key Milestone Activities	Proposed timeframe
Make Draft Scoping Report available to the public, stakeholders and authorities for 30-day review period	01 April 2016 – 4 May 2016
Finalisation of Scoping Report, and submission of the Final Scoping Report to DENC	May 2016
Authority acceptance of the Final Scoping Report and Plan of Study to undertake the EIA	June 2016
Make Draft EIA Report and EMPr available to the public, stakeholders and authorities for 30-day review period	July-August 2016
Finalisation of EIA Report, and submission of the Final EIA Report to DENC	August 2016
DENC review period and decision-making (107 calendar days)	Within 107 days from receipt of the Final EIAR

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